GL Core Products

...Global Leader in Telecom Test And Measurement Solutions

Telecom Test Solutions

IP and Ethernet Simulation & Analysis
All Protocols over IP, TCP, UDP
Signaling, Traffic, Voice & Data QoS
10 GigE, MPLS, VLAN, SLA

Wireless Simulation & Analysis
LTE, VoLTE, UMTS, GSM, TRAU, GPRS
Wireless Drive Testing, GPS Mapping
Signaling, Traffic, Voice & Data QoS

TEST
ANALYZE
MONITOR

TDM Simulation & Analysis
Signaling & Traffic
T1, E1, Analog, FXO, FXS

Network-wide Monitoring Solutions
Signaling & Traffic
VoIP, TDM, Wireless

Voice, Fax, Data, & Video Quality
IP, TDM, PSTN, 3G 4G,2G, Bluetooth
PESQ, POLQA, PAMS
Data Testing over Wired and Wireless

High Speed Telecom Lines
OC-3, OC-12, STM-1, STM-4, T3, E3
Channelized & Unchannelized

GL Communications Inc.
818 West Diamond Avenue - Third Floor, Gaithersburg, MD 20878
Phone: (301) 670-4784 **Fax:** (301) 670-9187 **Email:** info@gl.com

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TDM Hardware & Software Products

OctalXpress and QuadXpress T1E1 PCIe Cards

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FTE001 **QuadXpress T1 E1 (Main Board)**
Quad Port T1 E1 Main Board w/PCIe (x1) Interface – requires ETA00x or EEA00x licenses

ETE001 **QuadXpress T1 E1 (Daughter Card)**
Quad Port T1 E1 Daughter Board – Requires FTE001 Main Board and ETA00x or EEA00x

ETA002 **Two Port License for T1 -** Two T1 Ports Licensed
ETA004 **Four Port License for T1 -** Four T1 Ports Licensed
ETA008 **Eight Port License for T1 -** Eight T1 Ports Licensed
ETAxxx **Optional Software Apps for T1**
EEA002 **Two Port License for E1 -** Two E1 Ports Licensed
EEA004 **Four Port License for E1 -** Four E1 Ports Licensed
EEA008 **Eight Port License for E1 -** Eight E1 Ports Licensed
EEAxxx **Optional Software Apps for E1**

Quad, Octal T1 E1 Card

tScan16 Express Card

TTE001 **tScan16 Express Card**
16 port T1 E1 Receive Only Card – w/ GL Windows software and optionally Linux API, requires TTE002

TUT001 **Basic Software License for T1**
TUE001 **Basic Software License for E1**
TUTxxx **Optional Software Apps for T1**
TUExxx **Optional Software Apps for E1**
TTE002 **Cable and Breakout Box for 16 RJ-48 Interfaces**
TTE003 **19" Rackmount Kit for Breakout Box**

Dual T1 E1 Express PCIe Card

XTE001 **Dual T1 E1 Express Card**
Dual T1 E1 Card w/PCIe (x1) Interface – supports pulse mask and jitter functions; requires XUT001 or XUE001 for each card; special apps licensed per system

XUT001 **Basic T1 Software**
w/Basic Software for WIN 7 / 8.1

XUE001 **Basic E1 Software**
w/Basic Software for WIN 7 / 8.1

Dual T1/E1 Express PCIe Card

Universal Dual HD T1E1 PCI Cards

HTE001 **HD Universal Dual T1/E1 Card**
Universal Dual T1 E1 Card – supports pulse mask and jitter functions; requires HUT001 or HUE001 for each card; special apps licensed per system

HUT001 **Basic T1 software**
w/Basic Software for WIN 7 / 8.1

HUE001 **Basic E1 software**
w/Basic Software for WIN 7 / 8.1

http://www.gl.com/universalt1e1.html

For legacy products, please visit http://www.gl.com/t1e1testing.html

HD Universal Dual T1/E1 Card

Phone: (301) 670-4784 **Fax:** (301) 670-9187 **Email:** info@gl.com

GL Communications Inc.

TDM Hardware & Software Products

tProbe™ - T1 E1 VF, Serial Data Communications Analyzer

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PTE001 tProbe™ Analyzer (Dual Ports)
Portable USB Unit – requires PTA001 or PEA001

PTA001 T1 Software for tProbe™

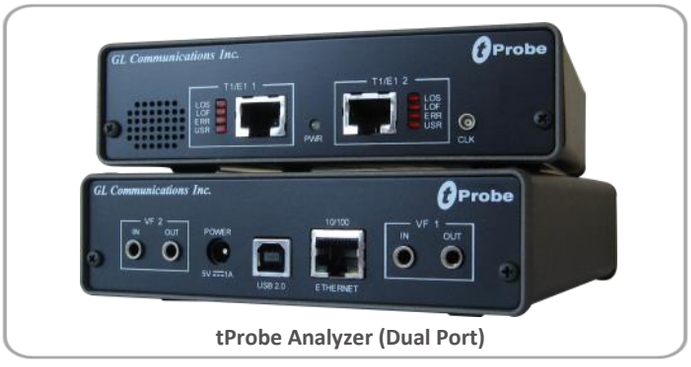
PEA001 T1 Software for tProbe™
w/Basic Software for WIN 7 / 8.1

SA000c High Stability Internal Clock Option
+/- 1 ppm Internal Clock

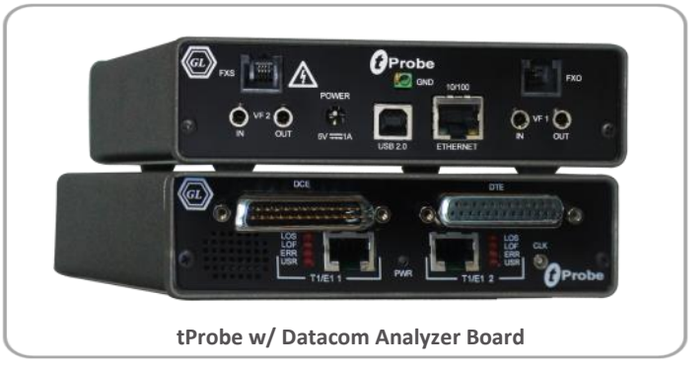
PTE015 w/ 2Wire FXO and FXS Optional Board
2Wire FXO FXS Board – T1 and E1 – uses xx600, requires xx624 (MAPS FXO FXS)

PTE025 tProbe™ with Data Communications Optional Board
Data Communications Board for Interfaces RS-232, RS-449, RS-442, EIA-530, EIA-530A, V.35, NRZI, Manchester (IEEE, GE T, Diff, FM0, FM1)

w/Basic Software for WIN 7 / 8.1 includes BERT, Enhanced BERT, Error Insertion, Tx/Rx Loopback, Precision Delay Measurement, Monitor Rx Data for Sync 2.4 KHz to 16.384 MHz and Async 300 Hz to 115.2 KHz



tProbe Analyzer (Dual Port)



tProbe w/ Datacom Analyzer Board

Software Options for Datacom Card

PTE020 Datacom Record / Playback File Software
File Capture & Transmit over Datacom; a versatile automated capture / transmit application

PTE090 Datacom Real-Time HDLC Decode / Store Software
Decode, Analyze, Capture HDLC frames, HDLC Tx/Rx Test, HDLC Impairment Utility, HDLC File Playback

PTE130 Datacom Real-Time Frame Relay Analyzer
Real-Time Frame Relay Analysis

PTE135 Datacom PPP Analyzer
Analysis and Decode of PPP protocols and other higher layer IP protocols

Datacom Board Cables

DBC001	**DB-25-3-M/M ASSY**	DB25 3 FT MALE TO MALE
DBC002	**DB-25-3-F/F ASSY**	DB25 3 FT FEMALE TO FEMALE
DBC003	**DB-25-3-M/F ASSY**	DB25 3 FT MALE TO FEMALE
DBC004	**DB25F-3-DB37F ASSY**	DB25 FEMALE TO DB37 FEMALE 3FT
DBC005	**DB25M-3-DB37M ASSY**	DB25 MALE TO DB37 MALE 3FT
DBC006	**DB25F-3-V.35F ASSY**	DB25 FEMALE TO V.35 FEMALE 3 FT
DBC007	**DB25M-3-V.35M ASSY**	DB25 MALE TO V.35 MALE 3 FT
DBC008	**DB25F-3-DB15F ASSY**	DB25 FEMALE TO DB15 FEMALE 3 FT
DBC009	**DB25M-3-DB15M ASSY**	DB25 MALE TO DB15 MALE 3 FT

For complete list of accessories including special hardware options, visit http://www.gl.com/productlist.html#datacom.

T1/E1 Portable USB Unit

UTE001 Dual Laptop T1/E1 Hardware USB Base Unit
Portable USB Unit - requires UTA001 or UEA001

UTA001 Basic T1 software
W/ Basic Software for WIN 7 / 8.1

UEA001 Basic E1 software
W/ Basic Software for WIN 7 / 8.1

SA000C Optional High stability +/- 1 ppm Internal Clock

http://www.gl.com/laptopt1.html

For legacy products, please visit http://www.gl.com/t1e1testing.html

Dual T1E1 Analyzer USB Pod

Phone: (301) 670-4784 **Fax:** (301) 670-9187 **Email:** info@gl.com

TDM Hardware & Software Products

Basic Applications for T1 E1 Analyzer

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Monitoring Applications

Monitor T1/E1 Status
Monitor line sync loss, HDB3 violation, carrier loss, frame error, distant MF, alarm indication signal (AIS), ES, and so on.

Four Wire VF Interface with Drop & Insert
Control the gain of the signal, feed the PCM signal on a timeslot to the VF Out jack or to an onboard speaker.

Clock options: Internal, External, & Recovered
Internal clock using an internal oscillator, recovered clock using the clock derived from the received signal, and external clock as provided at the SMB input.

Connection Options: Terminate, Bridge, Monitor
Input signal (the signal connected to the "T1/E1 In" jack) may be terminated using impedance, monitored, or bridged depending on user requirements.

Bytes Values Display for all time slots
Displays data values for each time slot in HEX data format.

Binary Byte Values Display for all time slots
Displays the data values for each time slot in binary data format.

Monitor signaling bits
Displays signaling bits associated with each timeslot are displayed in real-time.

Power Level Display for all time slots
Displays the rms (root-mean-square) value of the digital codewords (after expansion from µ-law or A-law) for each timeslot continuously in dBm.

DC Offset Display for all time slots
Displays DC offsets for all timeslots.

Frequency Display for all time slots
Displays signal frequency in each timeslot continuously.

Multiframe Byte Display
Permits viewing of a complete multiframe. For T1 systems, twelve (12) frames are displayed per multiframe in D4 (193S) framing format, and twenty -four (24) frames in ESF (193E) framing format. For E1 systems, 16 frames are displayed per multiframe.

Real Time Multiframe Monitoring
Permits viewing of multiframes in real-time. The data is refreshed for about every second.

Real Time Bitmap Monitoring
Permits a graphical view of complete multiframes as a real-time bitmap.

Time Slot Byte Display
Displays the timeslot value for about '1' second duration for a desired timeslot.

ASCII Time slot Display
Permits viewing of real-time ASCII events that are present on the T1 or E1.

Real Time Oscilloscope Display of DS0
PCM codes (amplitude of the incoming signal) of any selected timeslot are displayed in real-time graphically as a function of time.

Real Time Power Spectral Display of DS0
Permits viewing the data received on a specified timeslot spectral domain (spectral amplitude Vs frequency).

Audio Monitoring
Allows the control of VF output (speakers) of all T1/E1 cards connected to a PC under a single program.

Active Voice Level Monitoring
Computes the Active Voice Level according to the ITU-T P.56 specification, Method B.

Intrusive Testing Applications

Full / Fractional T1/E1 BERT with Drop & Insert
Generates/detects unframed, framed, and fractional data that are defined in Pseudo Random Bit Sequence (PRBS).

Enhanced Multi Channel Bit Error Rate Tester (Supported only in USB and HD T1/E1 analyzer units)
Measures the correctness of data received on T1/E1 lines according to the repetitive pattern file for a given transmission.

Transmit Tone
Transmits a tone of any frequency (within 5 Hz to 4000 Hz) into one or more timeslots simultaneously.

Transmit Gaussian Noise
Transmits Gaussian Noise into one or more timeslots simultaneously (the power level of the noise is adjustable from -140 dBm and up to a maximum of +3.17 dBm).

User-defined Multiframe
Users can define the contents of a multiframe for repeated transmission.

Signaling Bits
Transmits the signaling bits into one or more timeslots simultaneously.

Precision Delay Measurement
Measures the Round Trip Delay of a system.

Tx_Rx Loopback
This application is for diagnostic purposes only. It loops all the receive data from all timeslots back to the transmitting port.

Error Insertion
Permits single, fixed, automatic, and random error insertion into the incoming bit stream. Bulk delay is an added feature in Error insertion application (applicable only to USB Analyzers) that allows users to apply delay on the entire T1/E1 trunk (full multi-frame) of 1.544Mbps (T1) pipe or 2.048 Mbps (E1) pipe.

Basic Client/Server Scripted Control Software (XX600)
Precise & Sequential control of T1 or E1
Lines – Client/Server – Uses TCP/IP, included with basic software

Dual VF Tx Rx (XX605 only for tProbe™)
User Friendly GUI for analog / digital audio Tx/Rx functions – included with basic software, all necessary options except xx626

XX010 API Development Software Toolkit (Windows®)
Develop applications for T1/E1 Products for Windows Platforms ; Requires C++ programming skills.

XX011 API Development Software Toolkit (Linux)
Develop applications for T1/E1 Products for Linux Platforms ; Requires C++ programming skills

XX012 Pulse Shape & Jitter Generation/Measurement
Easy, accurate, visual pulse shape and jitter generation / measure ment of T1 E1 signals (Universals, tProbes, Express platforms); included with basic software

XX017 Real-time T1/E1 Multi-Channel Audio Bridge
Streams audio to/from TDM channel(s) from/to sound device(s) in a PC system; supports A-law, u-law, G.726 (16,

(Continued on page 6)

TDM Hardware & Software Products

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(Continued from page 5)

24, 32, 40 kbps), 722; included with basic software

XX022 DTMF/MF/MF-R2 Detector and Generator
Allows to transmit and receive DTMF/MF/MFC-R2 Digits with Detailed Analysis. included with basic software

XX023 E1 µ-Law Software or T1 A-law Software
Supports operation of T1 Systems with a-Law and E1 Systems with µ–Law. included with basic software

XX024 Real-time Strip Chart
Provides a real-time display of calls with synchronized PCM and signaling display.included with basic software

XX050 Signaling Bits Recorder Software
Records / Displays ABCD Signaling Bits – All Channels. included with basic software

STE050 Sample Traffic Files
Includes various Fax, Modem, Digits, Voice and Binary Traffic files for voice, fax, data, and tone testing of networks.

Special Applications for T1 E1 Analyzer

XX018 Multi-Channel BERT Software
Supports simultaneous and independent BERT's on many sub-channels, timeslots, and hyper-channels.

XX019 Transmit / Receive File Utility
Includes a Command-line utility for file transmit and receive over T1/E1; a similar versatile GUI application is also provided.

XX020 Record Playback Software
File Capture & Transmit over T1 E1 plus a versatile Automated capture/transmit application and Synchronous Trunk Record Play back Application; includes STE040 Mux / De Mux Software

STE040 Multiplex / Demultiplex Software
Processing Software for T1/E1 Tx / Rx Files – requires dongle; included with xx020 Record / Playback Software

XX021 FDL Software for ESF (T1 Only)
Supports transmit and capture over ESF links.

OLV021 Offline FDL Analysis Software for ESF (T1 Only)
Offline FDL Analysis Software for T1 ESF Links

Call Capture & Analysis Software Options

XX031 Enhanced T1/E1 Call Capture/Analysis Software
CCA with traffic based call triggering. Trigger and capture on spe cific traffic types e.g. fax, specific modems, voice, and tones such as dial, busy, ringback, royalty, includes CMU031

CDR032 Call Data Records
Provides detailed and complete call information for every call including detailed signaling, alarm, and voiceband events. Requires and works with Multiple Call Capture xx031, or Packet Scan PKV100, or PPP/ML-PPP xx135 and xx136. Also requires VBA032 and VBA036; requires dongle(s)

CMU031 Call Management Utility
Organize, play, and view captured calls from XX031 software – requires dongle, included with XX031

Windows Client/Server Software Options

XX606 Pulse Shape & Jitter Measurement
Pulse Shape and Jitter Measurement Data of T1 E1 signals (Universal and tProbes only), included with basic software

XX610 w/ Transmit and Receive File capability
Provides ability to Tx Rx Files directly over T1/E1 lines – server based; ability to Tx Rx data directly from client; includes xx600

XX620 w/ DTMF/MF/MFC-R2 + answer/place call capability
Tone and Dual Tone detection and generation and CAS signaling capability; included with basic software

XX625 w/Channel Associated Signaling Simulator
Special Client simulates all CAS protocols, including wink-start, loop-start, ground start, R1, MFC-R2, etc. (includes xx600, requires xx610, xx620, and xx630) also available as a remote client with dongle

XX626 w/ SS1 Signaling Analyzer and Dialer
SS1 Signaling analysis and dialer for FAA circuits; includes xx600, xx605, xx610, xx620, and xx630

XX629 w/ISDN Emulation
Emulates call setup and teardown using ISDN protocol – all variants; includes xx600 and xx640, recommended xx610 and xx620 for traffic generation and reception.

XX630 w/ DSP Capability
Permits complex DSP Operations; includes xx600

XX631 w/Dynamic DSP Capability
Permits time varying DSP Operations; requires xx600, requires xx630

XX634 w/ High Throughput HDLC Tx/Rx Test
Allows HDLC Simulation with large number of hyper-channels, channels, and sub-channels, with impairments; includes xx600.

XX635 w/ High Throughput PPP Tx/Rx Test
PPP Emulation, includes xx600, requires xx634

XX636 w/ High Throughput MC ML-PPP Tx/Rx Test
Performs MC ML-PPP and NCP Emulation-including Client GUI for MCML-PPP Emulation-includes xx600, requires xx634 & xx635

XX640 w/ HDLC Encode/Decode & Remote Capture
Allows sending and receiving HDLC frames from files; Includes xx600.

XX643 w/ MTP2 Emulation
Emulates endpoints using MTP2 protocol stack for building signaling systems for validation and testing; includes xx600.

XX646 w/ TRAU Frames Tx & Rx with error testing
Continuity testing within payload over multiple TRAU Traffic Channels; includes xx600.

XX650 w/ File based HDLC Record/Playback over SA-bits
Supports receiving and transmitting of HDLC frames on TS0 special bits in *.hdl file format– E1 only; includes xx600.

XX660 w/ File based Record/Playback FDL
Supports receiving and transmitting over ESF – T1 only; includes xx600.

TDM Hardware & Software Products

XX670 **w/Multi-Channel Rx BERT**
Supports simultaneous Rx BERT on many timeslots and hyper Channels; includes xx600, requires xx610.

XX680 **w/T1E1 Traffic Classifier**
Analyzes and classifies various traffics such as voice, fax, data, tones (dial tone, ring-back tone, busy tone etc) as well as identify dialing digits and other events happening on a T1/E1 network; requires dongle

XX690 **w/ SS7 Protocol Decode Agent**
Client application to monitor and decode SS7 Links, filters based on user specified protocol parameters, builds CDRs, 069 streams over TCP/IP to remote site; specialized client required at remote site; includes xx600.

XX691 **w/ ISDN Protocol Decode Agent**
This is a console client application that monitors ISDN Links, decodes multiple ISDN protocol standards, filters, user specified protocol parameters, builds CDRs, streams over TCP/IP to remote site; specialized client required at remote site; includes xx600.

XX653 **ATM-SSCOP Emulation**
SSCOP Emulation over ATM

XX654 **Inverse Multiplexing over ATM (IMA) Protocol Emulation**
Emulates Inverse Multiplexing over ATM (IMA) over multiple T1s or E1s; includes GUI, includes xx600.

XX655 **w/ Multi-link Frame Relay Emulation**
Emulates, transmits, and receives multilink frame relay test traffic; includes xx600, requires xx634

MAPS™ (Message Automation and Protocol Simulation)

Protocol Simulation & Conformance for TDM

XX656 **MAPS – INAP Emulation**
ITU SS7 INAP CS1 CS2 Emulation

XX624 **MAPS™ FXO FXS (only for tProbe™)**
Emulates 2wire FXO / FXS interfaces, requires PTE015; includes xx600, xx610, and xx620

XX649 **MAPS™ – SS7 (ISUP and MAP) Emulation**
SS7 Protocol Emulation with detailed control, includes xx600, requires xx610 and xx620 for traffic generation; xx643 is included; Also available as a remote client with dongle

XX647 **MAPS™ – SS7 / ISUP Conformance Scripts**
Includes SS7 / ISUP Protocol Conformance Scripts; requires xx649

XX648 **MAPS™ – ISDN Emulation**
ISDN Protocol Emulation with detailed control, includes xx661 for LAPD Emulation, requires xx610 and xx620 for traffic generation; Fax emulation supported (Optional - Refer XXXFT0)

XX642 **MAPS– ISDN Conformance**
ISDN Protocol Conformance Test Scripts, includes xx661

XX661 **LAPD Server**
Emulates endpoints using LAPD protocol stack for building signaling systems for validation and testing, includes xx600

XX662 **LAPD Conformance**
LAPD Conformance testing as per ITU / ISO specifications, includes xx600, requires xx634

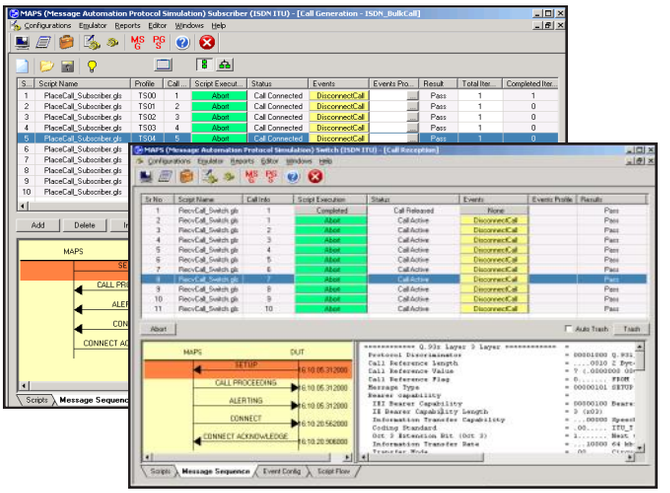
XX651 **MAPS™ CAS Emulation (may require CB)**
Special Client simulates all CAS protocols, including wink-start, loop-start, ground start, R1, MFC-R2, etc. (includes xx600, re quires xx610, xx620, and xx630); Fax emulation supported (Optional - Refer XXXFT0); also available as a remote client with dongle
May require Channel Bank (APSCB-24 or APSCB-48) for 2wire emulation

XX652 **MAPS™ – MC ML-PPP Protocol Conformance Scripts**
Includes MC ML-PPP Protocol Conformance Scripts; includes xx600, and xx634

XX692 **MAPS™ – GSM A Interface Emulation**
GSM A Interface Emulation with detailed control, includes xx600 and xx643; requires xx610 and xx620 for traffic generation

XX693 **MAPS™ – GSM Abis Interface Emulation**
GSM “Abis” Interface Emulation with detailed control, includes xx600, xx661 and requires xx646 for TRAU Tx Rx

XX694 **MAPS™ MAP Emulation**
MAP Protocol Support for interfaces B,C,D, E, F, G, and H



MAPS™ Call Generation and Call Reception

XX695 **MAPS™ SS7 BICC Emulation**
Bearer Independent Call Control (BICC) Emulation

XX682 **MAPS – IUP Emulator**
BT (UK) IUP Protocol Emulation, includes xx600 and xx643; xx610 and xx620 required for traffic generation; Fax emulation supported (Optional - Refer XXXFT0);

XX696 **MAPS™ SS7 CAP Emulation (CAMEL App Part)**
Customized Application for the Mobile network Enhanced Logic – CAMEL Application Part (CAP) includes xx600 and xx643

XX697 **MAPS™ BSC to SGSN Emulation over E1**
BSC to SGSN Emulation over E1 (at BSC), includes xx600

XX698 **MAPS™ SGSN to BSC Emulation over E1**
SGSN to BSC Emulation over E1 (at SGSN)

XX699 **MAPS – ANSI MAP Emulation**
IS41 Emulation on B, C, E, F, H, Q, and N interfaces xx600, and xx634

XX090 **T1/E1 Real-time HDLC Decode/Store/Impair Software**
Decodes, Captures, Impairs HDLC frames from DSO timeslots.

XX095 **E1 Real-time SA Bit HDLC Analysis**

Transmits and captures HDLC frames from SA bits TS0.

XX100 T1/E1 Real-time ISDN Protocol Analyzer
Supports real-time monitoring, decoding, and analysis of ISDN D-Channel.

XX105 T1/E1 Real-time ISDN Protocol Emulator
Supports call emulation using all flavors of ISDN.

XX110 E1 Real-time V5.x Protocol Analyzer
Supports real-time monitoring, decoding, and analysis of V5.X.

XX120 T1/E1 Real-time SS7 Protocol Analyzer
Supports real-time monitoring, decoding, and analysis of SS7 (MTP, ISUP, TCAP, SCCP,INAP, IS-41, TUP, CAMEL,CAP)

XX130 T1/E1 Real-time Frame Relay Protocol Analyzer
Supports real-time monitoring, decoding, and analysis of Frame Relay protocol.

XX135 PPP and ML-PPP Analyzer
Analysis and Decode of ML-PPP and PPP protocols and other higher layer IP protocols

XX136 PPP and ML-PPP Packet Analysis
Realtime Packet Voice, Video, and Fax Analysis – includes SIG TRAN, PacketScan functions - but not specialized codecs; requires xx135

XX140 T1/E1 Real-time GR303 Protocol Analyzer
Supports real-time monitoring, decoding, and analysis of GR303 (TMC, EOC, CSC)

XX142 T1/E1 Real-time CDMA2000 Protocol Analyzer
Supports real-time monitoring, decoding, and analysis of A interfaces in CDMA2000 networks.

XX150 T1/E1 Real-time GSM Protocol Analyzer
Supports real-time monitoring, decoding, and analysis of GSM protocol (all layers).

XX151 T1/E1 Real-time GSM Protocol Analyzer with Motorola Mobis Option
Supports real-time monitoring, decoding, and analysis of GSM protocol – all layers with Motorola Mobis decodes; requires xx150.

XX153 TRAU Protocol Analyzer : w/ PDA for Voiceband Analysis
TRAU Playback : TRAU Playback of captured TRAU files
TRAU Toolbox : TRAU Toolbox – Emulate Tx/Rx TRAU

XX155 T1/E1 Real-time GPRS Protocol Analyzer
Supports real-time monitoring, decoding, and analysis of Gn-Interface & Gb-Interface.

XX160 T1/E1 Real-time ATM Protocol Analyzer
Supports real-time monitoring, decoding, and analysis of ATM on T1/E1 lines

XX165 T1/E1 Real-time UMTS Protocol Analyzer
Supports real-time monitoring, decoding, and analysis of broadband wireless protocols

XX089 Protocol Identifier
Identifies protocols within T1/E1 whether the bandwidth occupied is full, fractional, timeslot, or sub-timeslot.

XX500 Lucent Protocol Analyzers

OLV090 Offline/ Remote HDLC Protocol Analyzer
Decode and Analyze pre-captured HDLC files
Remote Protocol Analyzer (includes WCS xx600, requires xx640)

OLV095 Offline SA Bit HDLC Protocol Analyzer
Decodes and analyzes pre-captured SA Bit HDLC files.

OLV100 OLV100 Offline / Remote ISDN Analyzer
Decode / Analyze pre-captured ISDN files
Remote Protocol Analyzer (includes WCS xx600, requires xx640)

OLV110 Offline / Remote V5.x Protocol Analyzer
Decode / Analyze pre-captured V5.X files
Remote Protocol Analyzer (includes WCS xx600, requires xx640)

OLV120 Offline / Remote SS7 Protocol Analyzer
Decode / Analyze pre-captured SS7 files
Remote Protocol Analyzer (includes WCS xx600, requires xx640)

OLV130 Offline / Remote Frame Relay Protocol Analyzer
Decode / Analyze pre-captured Frame Relay files Remote Protocol Analyzer (includes WCS xx600, requires xx640), Note 2

OLV135 Offline PPP and ML-PPP Protocol Analyzer
Decodes and analyzes pre-captured ML-PPP and PPP files.

OLV136 Offline PPP and ML-PPP Packet Analysis
Offline Packet Voice, Video, and Fax Analysis - includes SIGTRAN, PacketScan™ functions - but not specialized codecs.

OLV140 Offline / Remote GR303 Protocol Analyzer
Decode / Analyze pre-captured GR303 files, Remote Protocol Analyzer (includes WCS xx600, requires xx640)

OLV142 Offline CDMA2000 Protocol Analyzer
Decodes and analyzes pre-captured CDMA2000 files.

OLV150 Offline GSM Protocol Analyzer
Decodes/Analyzes pre-captured GSM files;

OLV151 Offline GSM Protocol Analyzer with Motorola Mobis decodes
Decodes/Analyzes pre-captured GSM files with Motorola Mobis decodes; requires OLV150.

OLV153 Offline TRAU Protocol Analyzer
Decodes and analyzes pre-captured TRAU files.

OLV155 Offline GPRS Protocol Analyzer
Decodes and analyzes pre-captured GPRS files.

OLV160 Offline ATM Protocol Analyzer
Decodes and analyzes pre-captured ATM files.

OLV165 Offline UMTS Protocol Analyzer
Decodes and analyzes pre-captured UMTS files.

XX162 ATM BERT
Performs ATM Bit Error Rate testing over virtual circuits.

XX092 CAS (Channel Associated Signaling) Analyzer
Channel Associated Signaling Analyzer – includes xx600, xx610, xx620, and xx630; performs R1, MFC-R2, and other CAS Signaling Analysis

OLV092 Offline CAS Analyzer
Offline CAS Analyzer

DC007 DCME Test & Analysis Software w/ Desktop PC
DC008 DCME Test & Analysis Software w/Portable PC

TDM Hardware & Software Products

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TDM Network Monitoring Tools

PKV170 Network Surveillance Base Software (Perpetual License, Un limited Users/Nodes) – Includes Standard Server-Grade Computing Platform
Centralized Database Engine and Client – works with Protocol Analyzers, includes Oracle 11g Standard Edition One and Stand ard Server-Grade Computing Platform ; requires the following respective modules based on the protocol selection

PKV171 Network Surveillance Agent Toolkit
Documentation, sample code (C++), and technical support for real-time connection to probes

PKV175 T1 E1 Physical Line Monitoring Option for Network Surveillance
Provides T1 E1 Physical Layer Status with Network Surveillance Solution - requires PKV170

PKV172 ISDN Call Detail Record (CDR) Option for Network Surveillance
Provides ISDN CDR option for Network Surveillance Base Soft ware – At central site - requires OLV100; At probe level requires respective protocol analyzer software and hardware.

OLV100 Offline / Remote ISDN Analyzer
Decode / Analyze ISDN option for Network Surveillance Base Software

PKV173 SS7/SIGTRAN Call Detail Record (CDR) Option for Network Surveillance
Provides SS7 (ISUP and MAP) /SIGTRAN CDR option for Network Surveillance Base Software - At central site - requires OLV120 for SS7 or requires PKV106 for SIGTRAN; At probe level requires respective protocol analyzer software and hardware.

OLV120 Offline / Remote SS7 Analyzer
Decode / Analyze SS7 option for Network Surveillance Base Software

PKV106 Offline / Remote SIGTRAN Analyzer
Decode / Analyze SIGTRAN option for Network Surveillance Base Software

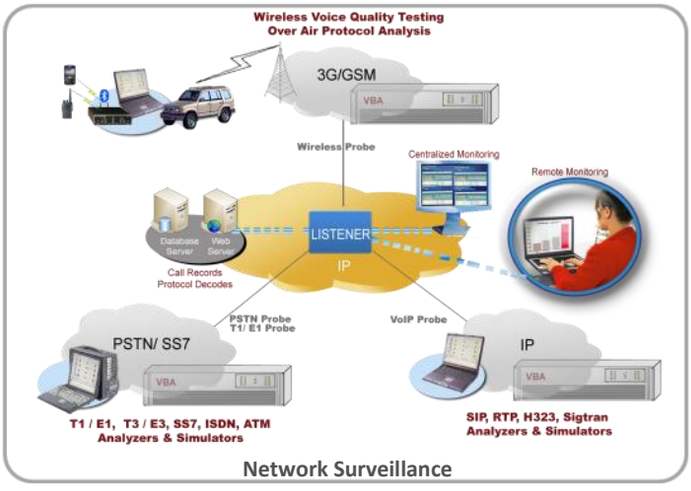
PKV092 CAS Call Detail Records (CDR) Option for Network Surveillance
Provides CAS CDR option for Network Surveillance Base Software – requires PKV170 and OLV092

OLV092 Offline/Remote CAS Analyzer
Decode/Analyze CAS Option for Network Surveillance Base Soft ware – requires PKV170 and PKV092

PKV174 GSM (TDM or IP) & TRAU Call Detail Record (CDR) Option for Network Surveillance
Provides GSM (TDM and IP) & TRAU (TDM) CDR option for Net work Surveillance Base Software - At central site - requires OLV150 for GSM and requires OLV153 for TRAU, OR requires PKV109 for GSM IP; At probe level requires respective protocol analyzer software and hardware.

OLV150 Offline / Remote GSM Analyzer
Decode / Analyze GSM option for Network Surveillance Base Software

OLV153 Offline / Remote TRAU Analyzer
Decode / Analyze TRAU option for Network Surveillance Base Software



PKV176 Provides VoIP Protocol (SIP, MGCP, Megaco etc.) CDR option for Network Surveillance Base Software
Requires SIP, Megaco, MGCP, H323, RTP Specific Software at Probe Level; requires PKV170 and PKV101

PKV101 Offline / Remote PacketScan Analyzer
Requires SIP, Megaco, MGCP, H323, RTP Protocol De codes at Central Site (w/ dongle) - requires PKV170 and PKV176

Miscellaneous

SME063 STM-1 Multiplexer / Demultiplexer
SME063D w/ 1:1 Fiber Protection
http://www.gl.com/stm-1-mux-demux.html
Multiplexes and demultiplexes 63 E1s into / from an STM 1; optional 1:1 Fiber Protection

For complete list of accessories including special hardware options, visit http://www.gl.com/accessor.html

TDM Hardware & Software Products

Repeaters, Switches, and Wireless Equipment

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MPT00 **T1 Multiport Repeater**

http://www.gl.com/mltiport.html

For 1:12 T1 Repetition

T1 Multiport Repeater

DPE00 **Dual E1 Multiport Repeater**

http://www.gl.com/mltiport.html

For 2X 1:4 E1 Repetition

Dual E1 Multiport Repeater

MPE00 **E1 Multiport Repeater**

http://www.gl.com/mltiport.html

For 1:12 E1 Repetition

E1 Multiport Repeater

SWT001 **T1 / E1 / J1 Monitor / Intrusive Switch**

http://www.gl.com/t1e1j1switch.html

For 8 Port Monitor / Intrusive Failsafe Switch

T1/E1/J1 Monitor / Intrusive Switch

DPT00 **Dual T1 Multiport Repeater**

http://www.gl.com/mltiport.html

For 2X 1:4 T1 Repetition

Dual T1 Multiport Repeater

BTS001 **Small BTS GSM Cell**
BTS with Abis over IP; up to 8 Tx/Rx channels

BTS010 **w/ GSM – R Option**
Optional GSM – R Features

BSC010 **BSC / MSC GSM – R Option**
Optional GSM – R Features for BSC and MSC

Fax & Modem Analysis Software

Back

FXT001 GLInsight™ - Single Fax Analysis - TDM
FXT002 GLInsight™ - Single Fax Analysis – IP
Provides offline fax protocol and image analysis of captured PCM files w/dongle.

http://www.gl.com/glinsight_overview.html

MDT001 GLInsight™ - Single Modem Analysis - TDM
MDT002 GLInsight™ - Single Modem Analysis - IP
Provides offline modem protocol and data analysis of captured PCM files w/dongle.

XXFT0 Fax Emulation
Fax Emulation for T1 E1 and Analog Interfaces (FXO and FXS), Includes xx600, requires one of the licenses as below-

XXFT2 2 Fax port licenses

XXFT3 8 Fax port licenses

XXFT4 30 Fax port licenses

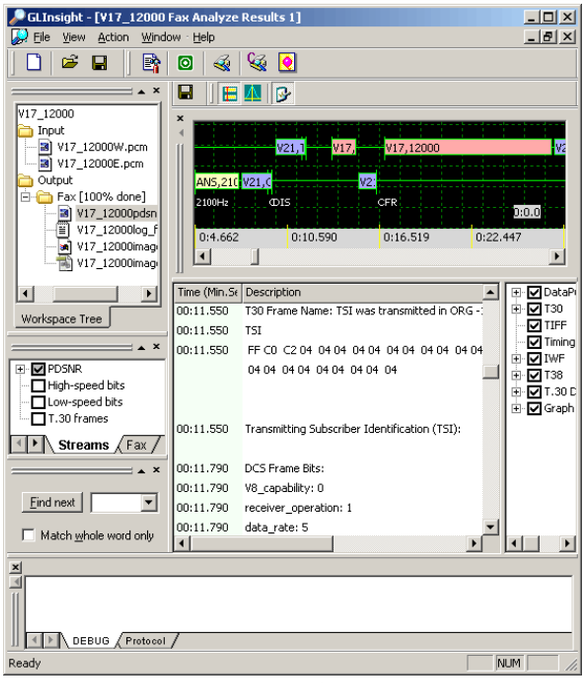
XXFT5 60 Fax port licenses

XXFT6 120 Fax port licenses

VQT035 Voice Recorder (FXO RJ11 Hardware Tap / 2-Wire Capture Software)
Used for capturing Audio from RJ11 connections for GL Insight Fax / Modem Analysis, requires Dual UTA or USB T1E1 unit; includes FXO RJ11 Hardware Tap.

VBA038 FaxScan™ for PCM

PKV104 FaxScan™ for SIP and Fax over IP (T.38)
FaxScan™ is GL's command-line Fax decoder/demodulator appli cation used to analyze the recorded voice band traffic (PCM stream & PCAP files) for Fax traffic. It provides analysis of the T.38 packets, T.30 frames, general call-flow indicators and decoded fax image in TIFF-F format. FaxScan™ is also available as a licensed module along with GL's Voice Band Analyzer (VBA) for processing 2-Wire or 4-Wire captures.



GL Insight™

Echo Canceller Test Tools

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PKB105 G.168 Echo Canceller Test Compliance Suite
Supports manual G.168 Echo Canceller Test Compliance Procedures and Codec Files (w/dongle to enable GLCView) ;includes PKB070.

PKB067 Automated Echo Canceller Testing – All IP Version
Provides Fully Automated EC testing per G.168 from the VoIP side includes PKB110 – call for details and limitations (w/dongle version); includes PKB070 and AEC001

PKB080 Automated Echo Canceller Testing TDM-VoIP
Provides Fully Automated LEC Testing per G.168 for combined TDM-VoIP Interfaces, requires dongle; includes PKB100, PKB110, xx600, xx610, xx630 and requires additional PKV100, T1/E1 Card with xx062 and xx105); includes PKB070 and AEC001

PKB081 Automated Acoustic Echo Canceller Compliance Testing (Partial Tests)
Provides Fully Automated AEC Compliance Testing per G.167 and P.340 for combined TDM-TDM and TDM-VoIP Interfaces, includes xx600, xx610, xx630, xx631;may require PKB100, PKB110, and Level Adjustment Unit ; xx062 and xx020 recommended ; includes PKB070.

AEC001 AutoEC Test Viewer
Offline Viewing of AutoEC Test Files / Results; included with PKB067 and PKB080

PKB070 AUDIO PROCESSING UTILITY
Adds noise, creates line or acoustic echo, analyzes speech level and other useful functions; included with EMU037, PKB105, PKB081, PKB067, PKB080, and VBA032

XX062 Echo Path Delay / Loss Simulation Software
Simulates Echo Path Delay and Loss w/GLCView ; includes PKB070

.

XX063 Echo Path Delay / Loss Measurement Software
Measures Echo Path Delay and Loss.

XX065 G.168 Manual Test Suite for T1 & E1 Echo Cancellers
(Manual Testing Software and Procedures)
Specialized procedures, test software, and test files for manual Echo Canceller Testing per CCITT G.168; w/ GLC View; includes xx020, xx062, xx063, xx066, and PKB070.

XX066 Digital Echo Canceller
This application is a multi-channel digital echo canceller; Measure and displays impulse response, ERL, delay, etc.

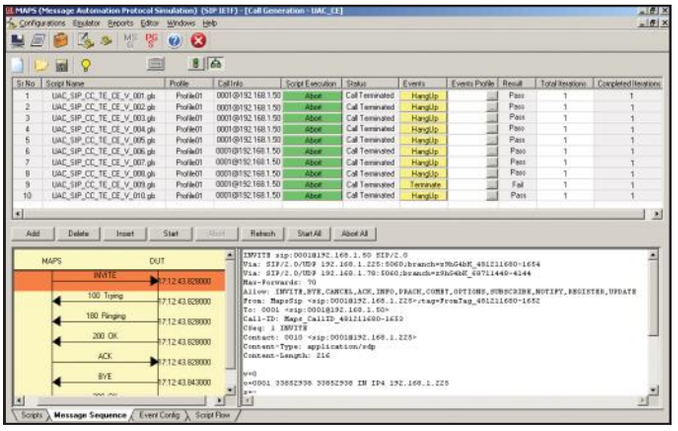
XX067 Automated Echo Canceller Testing without VQT
Performs automated Echo Canceller testing in accordance with G.168 ITU test requirements; optional Voice Quality Testing Software; includes xx019 Tx/Rx Utility software or xx600, xx610, and xx630; w/dongle.

XX068 Semi-Automated and Scripted Echo Canceller Testing Suite w/ C++ Client
Uses Windows Client Server Software (includes xx600, xx610, xx630) with customizable scripts for EC G.168 Testing; w/dongle - available with C++ Client.

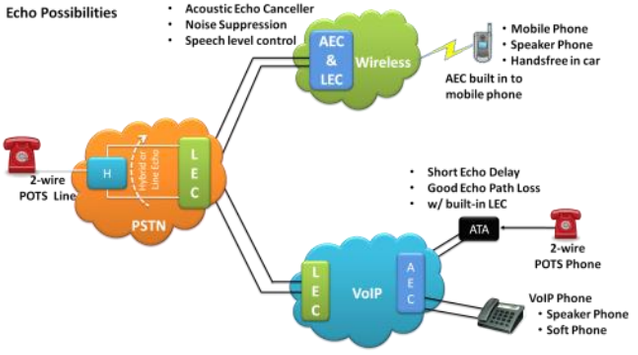
PKB080 Automated Echo Canceller Testing for TDM-VoIP
Refer to Voice Quality Testing Products for more details.

PKB081 Automated Acoustic Echo Canceller Compliance Testing (Partial Tests)
Refer to Voice Quality Testing Products for more details.

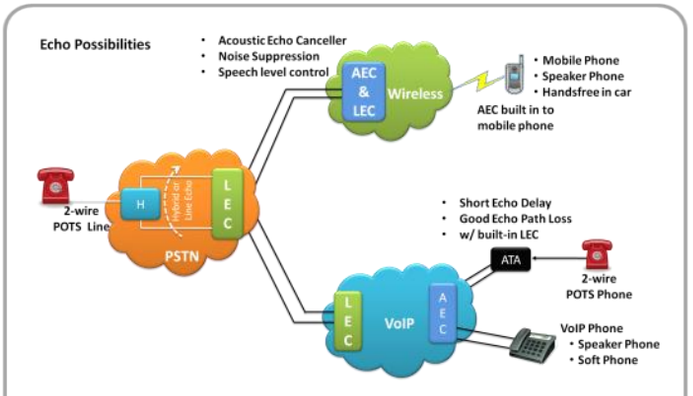
EMU037 Echo Measurement Utility
Analyzes echo return loss (ERL) and echo path delay (EPD) for 2Wire Analog, VoIP, T1 E1, and Mobile networks
Refer to Voice Quality Testing Products for more details.



MAPS™ Call Generation



Echo Canceller



TDM Echo Canceller Test Tools

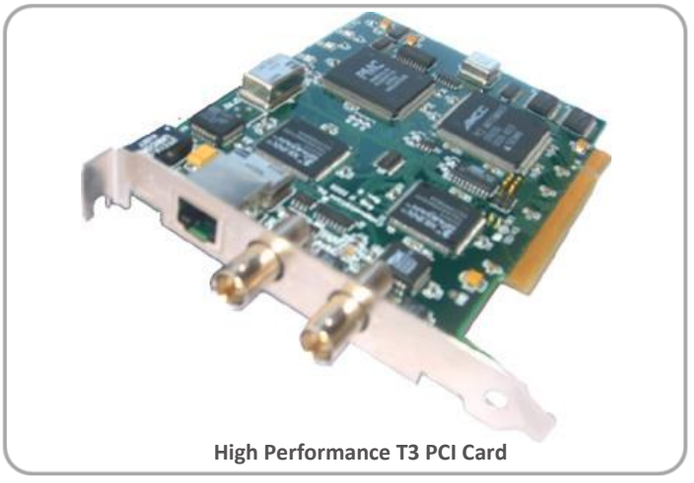
Phone: (301) 670-4784 **Fax:** (301) 670-9187 **Email:** info@gl.com

TDM Hardware & Software Products

UT301 **T3 Analysis Card with – with T1/E1 Interface**
UT302
SA000D **High Stability Internal Clock Option (+/- 1 ppm Internal Clock)**

- High Performance T3 PCI Card
- M23 and C-bit Framing Format
- w/ Basic Software, Client / Server and Command Line Utility
- Optional +/- 1 ppm Internal Clock
- Optional applications listed below

http://www.gl.com/ultrat3.html



High Performance T3 PCI Card

T3 Software Applications

UT3001 **FEAC Transmit / Receive**
Transmission and reception of Far End Alarm Channel (FEAC) codes

UT3002 **Maintenance Facility Data Link**
Transmission and reception of Terminal Path Maintenance Data Link (MDL)

UT3003 **API Development Toolkit**

UT3008 **T3 Hardware Warranty**

UT3009 **T3 Software Support**

T3 E3 Portable Unit

TE3001 **Dual T3 E3 / T1 E1 Hardware USB Base Unit**
Portable USB Unit – Requires TT3001 or EE3001

TT3001 **T3 / T1 / E1 Analyzer Basic Software**
Basic Software for Windows® XP/Vista

EE3001 **E3 / E1 Analyzer Basic Software**
Basic Software for Windows® XP/Vista

- Portable T3 E3 / T1/E1 High Performance USB Base Unit
- w/ Basic Software for T3 / T1 Analyzer Basic Software
- w/ Basic Software for E3 / E1 Analyzer Basic Software
- Optional applications listed below

http://www.gl.com/laptopt3e3.html

Dual T3 E3 / T1 E1 USB unit

TDM Hardware & Software Products

T3 E3 Software Applications

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Basic Applications

Monitor T3 or E3 Status
Monitors the T3 (DS3) /E3 line conditions for available T3/E3 ports

Alarm Generation and Error Injection
Internally generates various types of errors and / or alarms and transmits them on the outgoing T3 (DS3)/E3 stream

Tx Rx Memory Loopback
Loops all the received data from the memory back to the transmitting port

Monitor Received Data
Monitors raw bit values on the selected ports

Transmit and Receive Configurations
Various options (errors insertion , error counting, FEAC messaging, frequency offset) can be configured in the Tx/Rx parameters for the T3 (DS3)/E3 signal

Multiplex and De-multiplex T1/E1 signals
Processing Software for T3/E3 Tx / Rx Files

Bit Error Rate Test - BERT (Full Frame and Unframed)
Measures the correctness of data received on T3 (DS3) /E3 channels for a repetitive fixed or pseudorandom pattern for the given transmission

Special Applications

(Note: XX below denotes TT3 or EE3 depending on the T3 or E3 Basic Software Purchased)

XX020 Record / Playback File Software
File Capture & Transmit over T3 E3 – framed & unframed

TT3021 T3 FEAC Messaging
Decode and Simulate Far End Alarm Channel (FEAC) messages

XX090 HDLC Tx Rx Test + Analyzer (GUI)
Send, Receive, and Analyze HDLC over T3 or E3

XX135 PPP and ML-PPP Analyzer (GUI)
Analysis and Decode ML-PPP and PPP protocols and other higher layer IP protocols over T3 or E3

XX130 Frame Relay Analyzer (GUI)
Analysis and Decode Frame Relay protocol over T3 or E3

TT3160 T3 ATM Analyzer
Analysis and decode of ATM cells over T3

TT3200 Channelized T3 License for T1
TTTxxx Channelized Options for T1
Direct T1 Analysis for up to 28 T1s from T3
Channelized Options for T1

TT3210 Channelized T3 License for E1
EEExxx Channelized Options for E1
Direct E1 Analysis for up to 21 E1s from T3
Channelized Options for E1

EE3200 Channelized E3 License for E1
EEExxx Channelized Options for E1
Direct E1 Analysis for up 16 E1s from an E3
Channelized Options for E1

XX600 Basic Client/Server Scripted Control Software
Precise & Sequential control of T3 or E3 Analyzer via Client Server - Uses TCP/IP

XX610 Client Server Tx/Rx File
Tx / Rx Files on Unframed or Unchannelized T3 or E3; requires xx600

XX634 Client Server High Throughput HDLC Tx/Rx Test
HDLC Simulation over T3 or E3 with Impairments ; requires xx600

XX635 Client Server High Throughput PPP Tx/Rx Test
PPP Emulation over T3 or E3, requires xx634 and xx600

TE3002 USB T3 E3 Hardware Warranty
T3 E3 USB Extended 1 yr. Hardware Warranty

TE3003 USB T3 E3 Software Support
T3 E3 USB Extended 1 yr. Software Upgrades and Support

For complete list of accessories including special hardware options, visit http://www.gl.com/accessor.html

TDM Hardware & Software Products

LTS100 Lightspeed1000™ Quad OC-3/12 & STM-1/4 PCIe Card
PCIe Card / Portable Unit with Quad Interfaces: 2 - OC3/OC12, 2 - STM1/STM4, 2 - GigE, and a single USB 2.0; **requires** LTS200 or LTS201, or LTS300 or LTS301, LTS500 or LTS501.

- This is a Quad OC-3/12 STM-1/4 PCI-Express card
- Used for protocol analysis and emulation of ATM, POS, RAW, and Ethernet traffic at wire-speed.
- Supports 2 GigaBytes of DDR2 RAM, a GigE, and a USB 2.0 interface
- Supports both Unchannelized ATM (AAL2, AAL5), UMTS, PPP (IP and higher layer protocols) stream, and Channelized protocols such as ISDN, SS7, CAS, and more

LTS105 Lightspeed1000™ Portable Quad OC-3/12 & STM-1/4 USB Unit
PCIe Card / Portable Unit with Quad Interfaces: 2 - OC3/OC12, 2 - STM1/STM4, 2 - GigE, and a single USB 2.0; **requires** LTS200 or LTS201, or LTS300 or LTS301, LTS500 or LTS501.

- This is a portable USB based Quad OC-3/12 STM-1/4 unit
- Used for protocol analysis and emulation of ATM, POS, RAW, and Ethernet traffic at wirespeed.
- Supports 2 GigaBytes of DDR2 RAM, a GigE, and a USB 2.0 interface
- Supports both Unchannelized ATM (AAL2, AAL5), UMTS, PPP (IP and higher layer protocols) stream, and Channelized protocols such as ISDN, SS7, CAS, and more

http://www.gl.com/OC3-OC12-analysis-emulation-card.html

LTE001 E1 Personality for Channelized
E1 Personality for n x 16 E1 Channels

LTT001 T1 Personality for Channelized
T1 Personality for n x 16 T1 Channels

LTS102 Hardware Warranty
LTS103 Software Support

LTS111 API Software Toolkit for Custom Development (Linux)
Develop Custom Applications for OC-3/STM-1 OC-12/STM-4 Cards for Linux; Requires C++ dev skills

UnChannelized Analysis and Emulation Software Applications

LTS200 OC3 / STM1 ATM Monitor, BERT, Tx/Rx Test
Basic ATM Monitoring, Test, and BERT

LTS201 OC3 / STM1 PoS Monitor, BERT, Tx/Rx Test
Basic PoS Monitoring, Test, and BERT

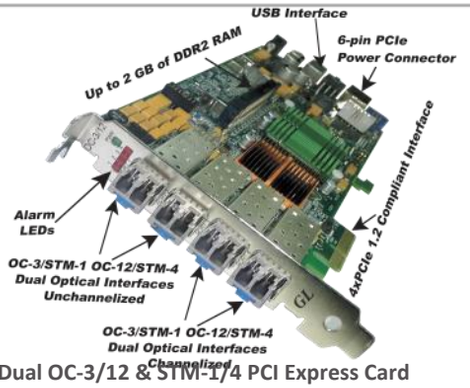
LTS300 OC12 / STM4 ATM Monitor, BERT, Tx/Rx Test
Basic ATM Monitoring, Test, and BERT

LTS301 OC12 / STM4 PoS Monitor, BERT, Tx/Rx Test
Basic PoS Monitoring, Test, and BERT

LTS202 Record Playback for OC3 / STM1 ATM
LTS203 Record Playback for OC3 / STM1 PoS
Wirespeed capture and playback to / from hard disk w/ time-stamping; STS-3C/VC-4

LTS204 Protocol Analysis for OC3 / STM1 ATM
AAL2, AAL5 Protocol Analysis

LTS205 Protocol Analysis for OC3 / STM1 PoS
PoS Protocol Analysis


USB Interface
Up to 2 GB of DDR2 RAM
6-pin PCIe Power Connector
4xPCIe 1.2 Compliant Interface
Alarm LEDs
OC-3/STM-1 OC-12/STM-4 Dual Optical Interfaces Unchannelized
OC-3/STM-1 OC-12/STM-4 Dual Optical Interfaces Channelized

Dual OC-3/12 & STM-1/4 PCI Express Card

Portable Dual OC-3/12 & STM-1/4 USB unit

LTS215 Packet Data Analysis (PDA) for PoS
Packet Data Analysis (PDA) for PoS

LTS206 Protocol Analysis for OC3 / STM1 UMTS
UMTS Protocol Analysis; requires LTS200

LTS216 Packet Data Analysis (PDA) for UMTS
IuCs Call Analysis for UMTS, also called PDA

LTS214 OC3 / STM1 SSCOP Server
SSCOP Server Emulates ATM Layer 2 and Adaptation Layer (AAL2/5) Services – used with MAPS -IuCs

LTS217 OC3 / STM1 AAL2 Traffic Core
Traffic Simulation over AAL2 using various codecs, ability to Tx Rx voice files, tones, digits, etc, can be used with LTS220, requires additional codec licenses

LTS220 OC3 / STM1 MAPS UMTS IuCS over ATM
IuCS Interface Emulation over ATM, simulates RNC and MSC, requires LTS214

LTS207 Delay Emulaton for OC3 / STM1 PoS payloads
Delay Emulation for PoS from 1 ms to 500 ms

LTS208 Delay Emulation for OC3 / STM1 ATM payloads
Delay Emulation for ATM from 1 ms to 500 ms

LTS302 Record Playback for OC12 / STM4 ATM
LTS303 Record Playback for OC12 / STM4 PoS
Wirespeed capture and playback to / from hard disk w/ time-stamping; STS-12C/VC-4-4C

LTS304 Protocol Analysis for OC12 / STM4 ATM
AAL2, AAL5 Protocol Analysis

TDM Hardware & Software Products

(Continued from page 15)

LTS305 Protocol Analysis for OC12 / STM4 PoS
PoS Protocol Analysis

LTS315 Packet Data Analysis (PDA) for PoS
Packet Data Analysis (PDA) for PoS

LTS306 Protocol Analysis for OC12 / STM4 UMTS
UMTS Protocol Analysis; requires LTS300

LTS316 Packet Data Analysis (PDA) for UMTS
IuCs Call Analysis for UMTS, also called PDA

LTS314 OC12 / STM4 SSCOP Server
SSCOP Server Emulates ATM Layer 2 and Adaptation Layer (AAL2/5) Services – used with MAPS -IuCs

LTS317 OC12 / STM4 AAL2 Traffic Core
Traffic Simulation over AAL2 using various codecs, ability to Tx Rx voice files, tones, digits, etc, can be used with LTS220, requires additional codec licenses

LTS320 OC12 / STM4 MAPS UMTS IuCS over ATM
IuCS Interface Emulation over ATM, simulates RNC and MSC, requires LTS214

LTS307 Delay Emulaton for OC12 / STM4 PoS payloads
Delay Emulation for PoS from 1 ms to 500 ms

LTS308 Delay Emulation for OC12 / STM4 ATM payloads
Delay Emulation for ATM from 1 ms to 500 ms

Channelized Analysis and Emulation Software Applications

The following are only available for PCIe version of Lightspeed 1000

LTS501 OC3 / STM1 RAW
LTS502 OC12 / STM4 RAW
Rx/Tx RAW – Channelized / Unchannelized

LTS503 Record Playback for OC3 / STM1 RAW
LTS504 Record Playback for OC12 / STM4 RAW
Wirespeed capture and playback to / from hard disk w/ time-stamping

LTS108 Any 16 Ports Channelized License for OC3 / STM1
Any 16 Ports Channelized License for OC3 / STM1

LTS116 Any 32 Ports Channelized License for OC3 / STM1
Any 32 Ports Channelized License for OC3 / STM1
LTS124 Any 48 Ports Channelized License for OC3 / STM1
Any 48 Ports Channelized License for OC3 / STM1

LTS132 Any 64 Ports Channelized License for OC3 / STM1
Any 64 Ports Channelized License for OC3 / STM1

LTS164 All Ports Channelized Licenses for OC3 / STM1
All Ports Channelized Licenses (84x2 for T1, 63x2 for E1)

LTEXXX Channelized Options for E1
Channelized Options for E1 (ISDN, SS7, HDLC)

LTTXXX Channelized Options for T1
Channelized Options for T1 (ISDN, SS7, HDLC)

OC3/12 STM1/4 Related Accessories and Cables

LTS400 512 MB Memory
LTS401 1 GB Memory
LTS402 2 GB Memory

IPN1310 SFP Transceiver for 1GB Optical, Duplex LC, Single-Mode, 1310nm
Generic SFP for 1GB Optical, Duplex LC Connector, Single-Mode, 1310nm, 15km typical maximum range

IPN850 SFP Transceiver for 1GB Optical, Duplex LC, Multi-Mode, 850nm
Generic SFP for 1GB Optical, Duplex LC Connector, Multi-Mode, 850nm, 550m typical maximum range

PN1310p SFP+ Transceiver for 10GB Optical, Duplex LC, Single-Mode, 1310nm
Generic SFP+ for 10GB Optical, Duplex LC Connector, Single-Mode, 1310nm, 10km typical maximum range

IPN850p SFP+ Transceiver for 10GB Optical, Duplex LC, Multi-Mode, 850nm
Generic SFP+ for 10GB Optical, Duplex LC Connector, Multi-Mode, 850nm, 300m typical maximum range

IPN801 SFP Transceiver for 1GB, Electrical, RJ45
Generic SFP for 1GB, Electrical w/ RJ45 Connector

SA019a 1GB / 10GB Fiber Optic Cable, Single-Mode, Duplex LC to Duplex LC
2m FO Jumper for 1GB or 10GB, 9/125 Single-Mode, Ø2mm

SA019b 1GB / 10GB Fiber Optic Cable, Single-Mode, Duplex LC to Duplex SC
2m FO Jumper for 1GB or 10GB, 9/125 Single-Mode, Ø2mm

SA019c 1GB / 10GB Fiber Optic Cable, Multi-Mode, Duplex LC to Duplex LC
2m FO Jumper for 1GB or 10GB, 50/125 Multi-Mode, OM3, Ø2mm

SA019d 1GB / 10GB Fiber Optic Cable, Multi-Mode, Duplex LC to Duplex SC
2m FO Jumper for 1GB or 10GB, 50/125 Multi-Mode, OM3, Ø2mm

SA019st 1GB / 10GB Fiber Optic Non-Intrusive T-tap, Duplex LC, Single-Mode
1GB / 10GB Fiber Optic T-tap for Non-Intrusive Monitoring, Duplex LC Connectors, 9/125 Single-Mode, 70/30 split – Should also or der SA019sc or SA019sk2

SA019sc Fiber Optic Analyzer Cable, (Special 'Y' Cable), Single-Mode, Duplex LC to Dual Duplex LC, 3m
3m FO Jumper, 9/125 SM, Duplex LC-Dual Duplex LC, Ø3mm, Special Analyzer Cable for use with SA019st

TDM Hardware & Software Products

UnChannelized Analysis and Emulation Software Applications

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(Continued from page 16)

SA019mt 1GB / 10GB Fiber Optic Non-Intrusive T-tap, Duplex LC, Multi-Mode
1GB / 10GB Fiber Optic T-tap for Non-Intrusive Monitoring, Duplex LC Connectors, 50/125 Multi-Mode, 70/30 split – Should also order SA019mc or SA019mk

SA019mc Fiber Optic Analyzer Cable (Special 'Y' Cable), Multi-Mode, Duplex LC to Dual Duplex LC, 3m
3m FO Jumper, 50/125 MM, Duplex LC-Dual Duplex LC, Ø3mm, Special Analyzer Cable for use with SA019mt

SA019rt Electrical Regeneration Tap for 10/100/1000Base-T (non-aggregation)
Wirespeed Non-aggregation replication and monitoring, passive access without packet tampering, traffic from all OSI layers available for analysis, no IP address, fail-safe bypass, redundant power option extra

SA019rta Electrical Regeneration Tap for 10/100/1000Base-T (aggregation)
Wirespeed aggregation replication and monitoring, passive access without packet tampering, traffic from all OSI layers available for analysis, no IP address, fail-safe bypass, redundant power option extra

SA019sk2 1GB Fiber Optic Single-Mode T-tap Kit with Required Cables and SFP Transceivers
Kit Includes: (1) SA019st, (1) SA019sc, (2) IPN1310, (2) SA019a, (2) SA019b

SA019mk2 1GB Fiber Optic Multi-Mode T-tap Kit with Required Cables and SFP Transceivers
Kit Includes: (1) SA019mt, (1) SA019mc, (2) IPN850, (2) SA019c, (2) SA019d

SA019skp2 10GB Fiber Optic Single-Mode T-tap Kit with Required Cables and SFP+ Transceivers
Kit Includes: (1) SA019st, (1) SA019sc, (2) IPN1310p, (2) SA019a, (2) SA019b

SA019mkp2 10GB Fiber Optic Multi-Mode T-tap Kit with Required Cables and SFP+ Transceivers
Kit Includes: (1) SA019mt, (1) SA019mc, (2) IPN850p, (2) SA019c, (2) SA019d

PCI Based OC3/STM1 Analysis Related Hardware & Software

TE3001 Dual T3 E3 / T1 E1 Hardware USB Base Unit
Portable USB Unit – Requires TT3001 or EE3001

TT3001 T3 / T1 / E1 Analyzer Basic Software
EE3001 E3 / E1 Analyzer Basic Software
w/ Basic Software for WIN XP/Vista

TE3002 T3 E3 Hardware Warranty
T3 E3 USB Extended 1 yr. Hardware Warranty

TE3003 T3 E3 Software Support
T3 E3 USB Extended 1 yr. Software Upgrades and Support

TT3020 T3 Record Playback Software (GUI)
EE3020 E3 Record Playback Software (GUI)
File Record / Send over T3/E3 – framed & unframed

TT3190 T3 HDLC Tx/Rx Test + Analyzer (GUI)
EE3190 E3 HDLC Tx/Rx Test + Analyzer (GUI)
Send Receive Analyze HDLC over T3/E3

TT3135 T3 PPP Analyzer (GUI)
EE3135 E3 PPP Analyzer (GUI)
Analysis and decode of ML-PPP and PPP over T3/E3

TT3130 T3 Frame Relay Analyzer (GUI)
EE3130 E3 Frame Relay Analyzer (GUI)
Analysis and decode of Frame Relay over T3/E3

TT3160 T3 ATM Analyzer (GUI)
Analysis and decode of ATM cells over T3

TT3600 T3 Basic Client Server Scripted Control Software
EE3600 E3 Basic Client Server Scripted Control Software
Precise & Sequential Control of T3/E3 Analyzer via Client Server – Uses TCP/IP

TT3610 T3 Client Server Tx/Rx File
EE3610 E3 Client Server Tx/Rx File
Tx / Rx Files on Unframed or Unchannelized T3/E3

TT3634 T3 Client Server High Throughput HDLC Tx/Rx Test
EE3634 E3 Client Server High Throughput HDLC Tx/Rx Test
HDLC Simulation with Impairments

TT3635 T3 Client Server High Throughput PPP Tx/Rx Test
PPP Emulation, requires TT3634

EE3635 E3 Client Server High Throughput PPP Tx/Rx Test
PPP Emulation, requires EE3634

PCI Based Ultra T3 Related Hardware & Software

UT301/ UT302 T3 Analysis Card – with T1 or E1 Interface
T3 Analysis Card w/ Basic Software and Client / Server and Command Line Utility,

SA00d High Stability Internal Clock Option
+/- 1 ppm Internal Clock

UT3001 FEAC Transmit / Receive
Optional Software for T3 Card

UT3002 Maintenance Facility Data Link
Optional Software for T3 Card

UT3003 API Development Toolkit
API Development Toolkit

UT3008 T3 Hardware Warranty
T3 Card extended 1 yr. hardware warranty

(Continued from page 17)

UT3009 **T3 Software Support**
T3 Card extended 1 yr. software upgrades and support

PCI Based OC3/STM1 Analysis Related Hardware & Software

UT401 **OC-3/STM-1 Analysis Card**
Requires UT4010 and/or UT4020 for each card; other special apps licensed per system

UT4010 **Basic OC-3, STS-1, T3, T1, E1 SONET Analysis software**
Breakout any Signal from OC-3, STS-1, T3, T1, or E1 Interfaces

UT4011 **Windows Client/Server Scripted Control SW**
Precise & Sequential Control of OC-3 Card over TCP/IP (SONET Version)

UT4020 **Basic STM-1, STM-0, T3, T1, E1 SDH Analysis software**
Breakout any Signal from STM-1, STM-0, T3, T1, or E1 Interfaces

- Most cost effective OC-3 and STM-1 PC based testing solution
- Complete solution incorporating SONET, SDH and PDH testing
- Flexible solution that can support single or multiple cards
- Analyzing, testing, simulating, and monitoring OC-3/STM-1 and STS-1/STM-0 signals
- Add and drop T1, E1, T3, STS-1/STM-0 signals to and from an OC-3/STM-1 signal or T1 and E1 signals to and from an STS-1/STM-0 signal
- Generate BERT patterns, internally in all framing modes

http://www.gl.com/OC-3analyzer.html

UT402 **OC-3 / STM-1 Hardware Warranty**
UT403 **OC-3 / STM-1 Software Support**

UT4021 **Windows Client/Server Scripted Control Software for SDH**
Precise & Sequential Control of OC-3 Card over TCP/IP (SDH Version)

Handheld Testers

Back

LTS001 LinkTest™ SINGLE

http://www.gl.com/linktestsingle.html

GL's LinkTest™ SINGLE is a single port T1/E1 tester in a compact, hand held package.

The unit can test a wide variety of communications facilities and equipment including Asynchronous, Synchronous, T1, fractional T1, E1, fractional E1, modems, multiplexers, CSU/DSUs, T1 ESF CSUs, DU, NTUs and TIUs.

LinkTest™ SINGLE

LTS002 LinkTest™ SINGLE+

http://www.gl.com/linktestsingleplus.html

Gl's LinkTest™ SINGLE+ is a single port T1/E1 T3 E3 tester in a compact, portable package.

The unit can test a wide variety of communications facilities and equipment including DDS, T1, fractional T1, E1, fractional E1, T3 and E3 NTUs, multiplexers, CSU/DSUs, T1 CSUs, DTUs and TIUs.

LinkTest™ SINGLE+

LTS003 LinkTest™ Dual

http://www.gl.com/linktestdual.html

GL's LinkTest™ DUAL is a dual port T1/E1 T3 E3 tester in a com pact, portable package with dual interfaces and a full color display.

The unit can test a wide variety of communications facilities and equipment including T1, fractional T1, E1, fractional E1, T3 and E3 modems, multiplexers, CSU/DSUs, T1 CSUs, DTUs, NTUs and TIUs.

LinkTest™ Dual

LTS101 LinkSIM™

http://www.gl.com/linksim.html

GL's LinkSim™ is a dual port T1/E1 Data Simulator for delay and Error insertion in a compact, portable package with dual interfaces and a full color display.

LinkSIM™

Handheld Testers

Handheld Testers (Cont...)

Back

LTS010 LinkTest™ Dual E1 - E1, Datacom, Jitter, Wander Testing

http://www.gl.com/linktest-dual-e1-datacom-tester.html

GL's LinkTest™ Dual E1 is a handheld dual-port tester for E1 and data communications (V.11 / X.24, V.24/RS232, V.35, V.36/R S449, EIA-530, EIA-530A) interfaces.

With the support of a large range of software options for E1 services and sub rate multiplexing system, this handheld unit provides a scalable test solution for E1 and data testing.
It provides a large, clear screen with a full set of physical layer tests for E1 balanced and unbalanced circuits including BERT, VF, round trip delay and signal level.

LTS011 Data Communication Option
Data (V.24, V.28, RS-232, X.21, V.11, V.35, V.36, RS-449, EIA-530, EIA-130A)

LTS012 Data, Jitter, and Pulse Mask Option
Data, Jitter, and Pulse Mask Option

LTS015 Remote Option
Remote Option

LTS010S Extended 1 Yr. Hardware and Software Support
Extended 1 Yr. Hardware and Software Upgrades and Comprehensive Support

LTS016a DTE/DCE Cables V.24 / V.28 / RS-232
LTS016b DTE/DCE Cables X.21 / V.11
LTS016c DTE/DCE Cables V.35
LTS016d DTE/DCE Cables V.36 / RS-449
LTS016e DTE/DCE Cables EIA-530A
Includes both DTE and DCE Cables

LinkTest™ Dual E1

LTS500 LinkTest Products Warranty
Extended hardware warranty beyond 1 year

DX005 Second-Year Extended Hardware Warranty
Please review Hardware Warranty Guidelines as outlined in the User Manual

LinkTest Series Cable and Accessories

SA600	1S0015 Cable DB15M / DB15M, 6'	For use with X.21
SA601	2C0001 Cable, DB25M/DB25F, 1' reversal	For use with RS232, RS530 and V.24 as DCE
SA602	2S0001 Cable, DB25M/DB25M, 6'	For use with RS232, RS530 and V.24
SA603	3A0001 Cable, DB25M/34M, 6'	For use with V.35
SA604	3S0001 Cable, Bantam/Bantam, 6'	For use with T-1
SA605	4A0001 Cable, DB25M/DB37M, 6'	For use with V.35
SA606	6S0001 Cable, BNC/BNC, 6'	For use with T-3/E-3 and E-1
SA607	6S358A Cable, BNC to 358A, 6'	For use with T-3
SA608	6S440A Cable, 440A to 440A, 6'	For use with T-3/E-3
SA609	6A440B Cable, BNC to 440A, 6'	For use with T-3/E-3
SA610	7A0002 Cable, Dual Bantam to RJ48, 6'	For use with T-1/E-1
SA611	7A0003 Cable, Bantam to BNC, 6'	For use with T-1/E-1
SA612	8A0002 Cable, RJ48/RJ48, 6'	For use with WT II to DDS CSU/DSU
SA613	8S0002 Cable, RJ48/RJ48, 6'	For use with WT II to DDS wall jack
SA614	K00002 Cable, Console - modular RJ11 to DB9 pin connector	For Laptop
SA615	K00004 Cable, Console - modular RJ11 to DB25 pin connector	For modem

Handheld Testers

PKV201 PacketShark™
GbE Packet Capture, Filter & Aggregation Tap

http://www.gl.com/packetshark-handheld-gigabit-ethernet-tester.html

GL's PacketShark™ is a handheld hardware that can tap packet networks, capture Ethernet packets at wire speed, i.e., in optical or electrical interfaces up to 1 Gb/s and selectively filter the captured traffic based on specified criteria. Packets are transmitted through two ports and the packets that are traffic compliant with one of the filters is sent to a packet analyzer, such as GL's PacketScan™ for detail packet analysis. Alternatively, the traffic can be even sent to a memory card (SD) and later analyzed offline.

PKV202 Remote Option

PKV201S Extended 1 Yr. Hardware and Software Support
Extended 1 Yr. Hardware and Software Upgrades and Comprehensive Support

PacketShark™

IPN701 IPNetSim™ Handheld - Ethernet, IP, WAN Network Emulator

http://www.gl.com/ipnetsim-handheld-wan-emulator.html

GL's IPNetSim™ Handheld is a hand-held battery operated instrument that can simulate the real-time IP and Carrier Ethernet network dynamics by means of hardware controlled packet delay, loss, jitter, errors, bandwidth limitations, congestion, and duplica tion. IPNetSim™ Handheld offers to manage network behaviors of up to 1 Gbps rates with accuracy always better than 1ms. IPNet Sim™ Handheld is equipped with hardware based impairments generator, and dual GbE ports.

IPN702 Remote Options

IPN701S Extended 1 Yr. Hardware and Software Support
Extended 1 Yr. Hardware and Software Upgrades and Comprehensive Support

IPNetSim™ Handheld

VQT290 VHandi—Hand Portable FXO call with VQT
Hand portable unit for manually and automatically generating FXO calls with support for VQT and path confirmation. Works with VQuad and VQT WebViewer™. Includes one FXO port and one Ethernet port for transferring results and degraded voice files to Central System.

vHandi Portable FXO call with VQT

Digital Central Office Switch Simulator (DCOSS)

DCOSS hardware converts a Pentium PC (portable, tower, rack-mount) into a digital central office switch simulator, PBX and switch, complete with T1, E1, and POTS Interfaces.

http://www.gl.com/dcoss.html

- Test advanced telecom networks and products, including switches, gateways, and transmission systems
- Complex switching, signaling, and digital transmission functions are easily controlled
- Verifying T1/E1 signaling protocols such as T1/E1 CAS, PRI ISDN, SS7 and Ss5

Digital Central Office Switch Simulator

DR001 **DCOSS Software (**Required**)**
R1 Protocol Included.

DOR001 **Remote Access (Client/Server)**
Over LAN, WAN, Internet.

DO010 **Optional Scripted Control for Bulk Call Generate / Receive Generation**
Includes Scripting GUI Editor.

Signaling Options

DR010 **T1 CAS Protocol**
Includes Loop Start & Ground Start.

DR007 **Digital E&M + European Digital CAS**
Countries Available: Brazil, Indonesia, Italy, Holland.

DR002 **MFC-R2**
Countries Available: Argentina, Bahrain, Brazil, China, Colombia, Czech Republic, India, Indonesia, Malaysia, Mexico, Singapore, Thailand, CCITT
Includes choice of 2 countries

DR003 **MFC-R2 Additional MFC-R2 Countries (each).**

DR005 **PRI ISDN Incudes USA, Europe, and Asia.**

DR042 **Signaling System 7 (4 MTP Links) w ISUP, Dual T1/E1 Interface**
Requires a full length PCI slot.

DR052 **Signaling System 7 (16 MTP Links) w ISUP, Dual T1/E1 Interface**
Requires a full length PCI slot.

DR035T **SS7 Layer, TUP**
Telephone User Part.

DR035S **SS7 Layer, SCCP/TCAP**

Trunks

DET002 **Dual E1/T1 (Software Selectable) Card**
Requires a full length PCI slot.

DET004 **Quad E1/T1 (Software Selectable) Card**
Requires a full length PCI slot.

Traffic Options

DM001 **DCOSS Fax License (per port)**
License per port.

DM00F **Quad trunk full fax license (Older generation boards only)**
Older generation boards only.

DM060 **Fax License (60 global faxes)**
New generation boards only.

DM480 **Fax License (up to 480 global faxes)**
New generation boards only.

DET004F **Quad E1 w/ full fax capability Card**
*See TDM Miscellaneous Software.

DOM096 **V.90 Modem with 96 ports**
***Also See TDM Fax/Modem Analysis Software**
Requires a full length PCI slot.

Access Interfaces

DS216 **Station Connect; 16-Port**
Requires a full length PCI slot.

DS232 **Station Connect; 32-Port**
Requires a full length PCI slot.

DS004 **Station Connect Power Supply**
For up to 32 phones

DS011 **24-Port Telco Breakout Box**
Used with APS and FXS

DS051 **16-Port BRI ST-Interface (Euro ISDN) (with power supply)**
Requires a full length PCI slot.

DS100 **Analog Telephone**

Miscellaneous

SA017A **RJ48C to RJ48C Straight Cable** 10 ft. length

SA017B **RJ48C to RJ48C Crossover Cable** 10 ft. length.

DP002 **Configuration Setup (**waived with PC Purchase**)**
hands on; exclusive of travel

DX001 **DCOSS Training (1 day) hands on; exclusive of travel**

DX002 **DCOSS Configuration, Setup, Testing (per day)**
exclusive of travel

DX004 **Extended 1 year Software Upgrades & Support**

DX005 **Second-Year Extended Hardware Warranty**
(Does not include PC)
Please review Hardware Warranty Guidelines as outlined in the User Manual

For list of supported PC Platforms options, visit PC Platforms page.

Digital Central Office Switch Simulator (DCOSS)

Analog Phone Simulator (APS)

APSCB-24 **24-Port Analog Phone Simulator, 115V P/S**
Simulates a bank of 24 phones; A minimal configuration DCOSS is required – (DT002 and DR001) Requires DS011

APSCB-48 **48-Port Analog Phone Simulator, 115V P/S**
Simulates a bank of 48 phones; A minimal configuration DCOSS is required – (DT004 and Dr001) Requires DS011

APSCBi-24 **24-Port Analog Phone Simulator, International, 230V P/S**
Simulates a bank of 24 phones; A minimal configuration DCOSS is required – (DT002 and DR001) Requires DS011

APSCBi-48 **48-Port Analog Phone Simulator, International, 230V P/S**
Simulates a bank of 48 phones; A minimal configuration DCOSS is required – (DT004 and Dr001) Requires DS011

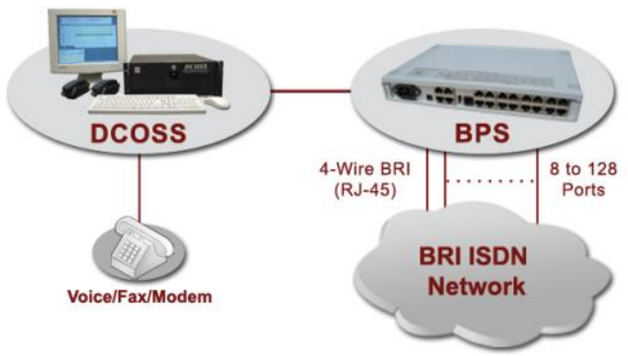
http://www.gl.com/aps.html

Analog Phone Simulator

Digital Phone Simulator (BPS)

BRI001 **PRI to BRI Conversion**
Converts 1 PRI to 8 BRI Interfaces

http://www.gl.com/dcossbps.html



PRI to BRI Conversion

Voice Quality Testing Products

VQT002 Voice Quality Testing (PESQ only)
GL's VQT (Voice Quality Testing) using ITU algorithms PESQ.

VQT004 Voice Quality Testing (PESQ, PAMS, PSQM)
http://www.gl.com/completevqtsolutions.html

- PESQ - Perceptual Evaluation of Speech Quality
- PAMS - Perceptual Analysis Meas. System
- PSQM - Perceptual Speech Quality Measure

VQT006 VQT w/ POLQA Server license (no limitations)
POLQA - Server license (no limitations) - Next Generation Voice Quality Testing for Fixed, Mobile, and IP based Networks – Dongle license required.

VQT006a VQT w/ POLQA only, small license for one / two nodes
POLQA Next Generation Voice Quality Testing for Fixed, Mobile, and IP based Networks; Dongle license required

VQT006b VQT w/ POLQA only, medium license for up to 5 nodes
POLQA Next Generation Voice Quality Testing for Fixed, Mobile, and IP based Networks; Dongle license required

VQT006c VQT w/ POLQA only, large license for up to 10 nodes
POLQA Next Generation Voice Quality Testing for Fixed, Mobile, and IP based Networks; Dongle license required

VQT Network Management Options

VQT208 Indoor (Underground) Tracking System
Provides location and timing information with voice quality for underground (non-GPS) areas.

VQT030 Network Command Center
This provides a Multi-Node Command and Control Center for VQuad™ System.

VQT040 VQT WebViewer™
This allows accessing the VQT results using a Web portal. Includes MS Access database.

VQT041 VQT Web Viewer w/ Oracle Database (Perpetual License)
For accessing VQT results using a Web portal. Includes Oracle 11g Standard Edition One (Perpetual License for Unlimited Users/ Nodes) User/Node is defined as any end-node that receives data from or creates data for the Oracle DB, including human users)

VQT / VQuad™ Support

VQT900 Extended (2nd Year) VQT Software Upgrades & Comprehensive Support
Software enhancements and support for subsequent one year increments.

VQT005S Extended (Annual) VQT POLQA Software Upgrades & Comprehensive Support
Software enhancements and support for subsequent one year increments for all permutations of POLQA products

EMU037S Extended (Annual) EMU037 Software Upgrades & Comprehensive Support
Software enhancements and support for subsequent one year increments

VQT030S Extended (Annual) VQT030 Command Center Software Upgrades & Comprehensive Support

VQT040S Extended (Annual) VQT040 VQT WebViewer™ Software Upgrades & Comprehensive Support

VQT041S Extended (Annual) VQT041 WebViewer (with Oracle Data base) Software Upgrades & Comprehensive Support

VQT022S Extended (Annual) VQT022 VQuad™ Fax Software Upgrades & Comprehensive Support

VQT600S Extended (Annual) VQT600 NetTest Software Upgrades & Comprehensive Support
Software enhancements and support for subsequent one year increments – for VQT600 and VQT601 combination

VQT601S Extended (Annual) VQT601 NetTest Software Upgrades & Comprehensive Support
Software enhancements and support for subsequent one year increments – for VQT601only

VQT610S Extended (Annual) VQT610 NetTest Target Server Hardware Warranty
Hardware Warranty for VQT610

VQT611S Extended (Annual) VQT611 NetTest Target Server GB Hardware Warranty
Hardware Warranty for VQT611

VQT270S Extended (Annual) VQT270 VQuad™ Warranty + Dual UTA / VQuad Probe Hardware Warranty
Hardware and Software Warranty for VQT270, Includes Dual UTA and VQuad Software Upgrades and Comprehensive Support

VQT271S Extended (Annual) VQT271 VQuad™ Warranty + VQuad Probe Hardware Warranty
Hardware and Software Warranty for VQT271

VQT650S Extended (Annual) VAC Server Software Upgrades & Comprehensive Support
Software enhancements and support for subsequent one year increment

VQT661S Extended (Annual) VAC 5Mbps Agent Software Upgrades & Comprehensive Support

VQT662S Extended (Annual) VAC 10Mbps Agent Software Upgrades & Comprehensive Support

VQT663S Extended (Annual) VAC 50Mbps Agent Software Upgrades & Comprehensive Support

VQT671S Extended (Annual) VAC 5Mbps Android Agent Software Up grades & Comprehensive Support

VQT901 Reinstatement of Interrupted Support
Software enhancements and comprehensive support for one year.

VQT902 Extended (Annual) VQuad™ Software Upgrades & Comprehensive Support
Includes upgrade from AFT.

VQT903 Extended Dual UTA Hardware Warranty (2nd Year)
For Dual UTA (VQT241).

VQT910 VQuad™ / VQT Training
Software and hardware training.

Voice Band Analyzer and Other Options

VBA032 Voice Band Analyzer
Analyze voice band parameters e.g. speech level, echo, noise, etc. required for CDR032, requires dongle. PKB070 is included.

VBA033 2-Wire Echo Analysis for VBA
Analysis of echo on two-wire captures

VBA035 E-model Analog Algorithm Option
2-wire voice band analysis option to VQT WebViewer™ application. Requires VBA032.

VBA036 Traffic Analysis for VBA
Analysis of voiceband traffic such as tones, fax, and call progress signals, required for CDR032

VBA038 FaxScan™ for PCM
Demodulates Voice band Fax Signals (PCM) & then Decodes T.30 Fax Images

PKV104 FaxScan™ for SIP and Fax over IP (T.38)
Decodes Fax Images from PCAP files

SA048 Goldwave Software
Accessory software for creating and viewing audio files. Desirable for VQuad™ but required for VQT002 and VQT004

Voice Quality Testing Products

VQT010 VQuad™ Basic Software
The software allows automatic sending and recording of voice files for Wireless, Analog, VoIP, and TDM interfaces. Includes CLI for remote operations.
http://www.gl.com/vquad.html

VQuad™ Hardware, Cable and Accessories

VQT241 Dual Universal Telephony Adapter (UTA) with RTD and OWD
Hardware required with VQuad™ software for transmitting and receiving voice files to perform Voice Quality Analysis. Provides multiple interfaces for connecting to any telephony network.

VQT242 Dual UTA - Bluetooth Option
Permits Bluetooth interface to mobile phones (or other Bluetooth device). Can be used for call control and transmitting and receiving voice files through Bluetooth enabled devices.

VQT011 Dual UTA - Software Development ToolKit (SDK)
Includes Dual UTA – Software Development ToolKit (SDK) with documentation for custom software development applications.

VQT204 Real-time GPS location and timing option for Dual UTA
Provides Garmin GPS receiver and custom cable for interfacing to Dual UTA. Location and one pulse-per-second timing are both available.

VQT209 Dual UTA Audio / PTT 600ohm to 50ohm Adapter
Passive impedance matching adapter for connecting the Dual UTA Audio / PTT output (600 ohm) to a Mic input (50 ohm)

VQT442 Dual UTA Mobile Audio Cable for Smartphones
Connects Dual UTA Tx / Rx audio to 3.5mm jack - enabled Smartphones. Includes optional polarity adapter.

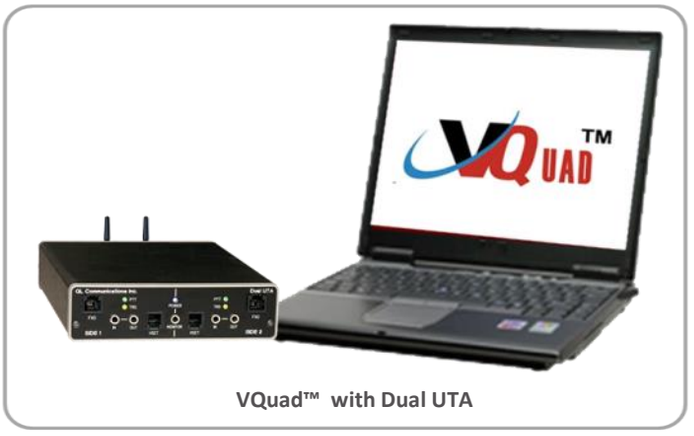
VQT443 Cell phone Adapter Cable
Custom, adapts VQT442 to 2.5mm 3-wire plug.

VQT446 Dual UTA Mobile Audio/PTT Cable
Custom 6-pin Cable with U-329 Connector.

VQT447 Dual UTA Custom Motorola Radio Audio/PTT Interface Cable
In-line custom wired RJ45 coupler.

VQT449 Dual UTA Audio /PTT Interface Cable (RJ-45 to W425)
Custom RJ-45 to W425 (Dual WECO 310). Connects Dual UTA to FAA Voice Switch / Plug Termination

VQT448 Dual UTA Mobile Audio/PTT Cable
Custom configuration.



VQuad™ with Dual UTA

VQuad™ Probe

VQT270 VQuad™ Probe with Dual UTA
Self contained unit for unattended testing includes VQuad™, Dual UTA, and PC with failsafe operation. PC portion includes two GBit Ethernet and four external USB interfaces

VQT274 VQuad Probe Touchscreen Monitor
Connects to the VQuad Probe via USB and provides a portable 10” monitor with touchscreen access. Includes virtual keyboard

VQT273 VQuad Probe Watchdog Service
Background service for VQuad Probe, auto reboot Probe if Win dows becomes inactive or VQuad software is non-responsive. Normal shutdown of VQuad will not cause reboot (i.e. VQuad Probe maintenance or software upgrade)

VQT271 VQuad™ Probe without Dual UTA
Self contained unit for unattended testing includes VQuad™ and PC with failsafe operation. PC portion includes 2 gigabit Ethernet and 4 external USB interfaces

VQT275 VQuad™ Probe Upgrade
Upgrade existing VQuad™/Dual UTA into a single self contained unit for unattended testing. Includes PC with failsafe operation. PC portion includes two GBit Ethernet and four external USB interfaces

Self Contained VQuad™ Probe™

Voice Quality Testing Products

VQuad™ Network Options

Back

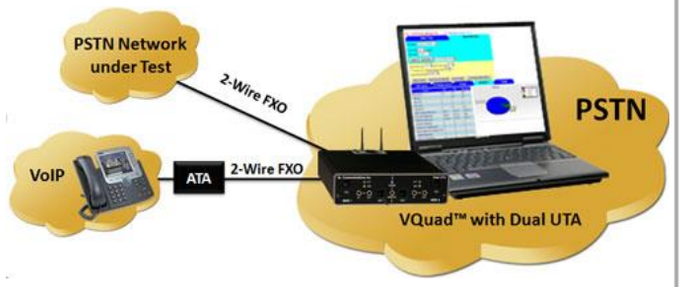
VQT279 VQuad™ Probe Rackmount kit
Attaches to VQuad Probe to allow VQuad™ Probe to be mounted to a 19' Rack

VQT022 VQuad™ Fax Emulation (2 simultaneous ports)
VQT022a VQuad™ Fax Emulation (8 simultaneous ports)
Fax Emulation using Dual UTA interfaces (FXO and 4wire); fax rates from 1200 bps to 33.6 kbps; multiple Dual UTAs possible

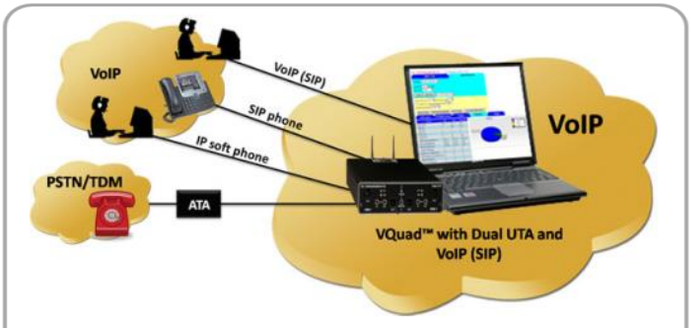
Echo Measurement Utility
Analyzes echo return loss (ERL) and echo path delay (EPD) for 2Wire Analog, VoIP, T1 E1, and Mobile networks. PKB070 is included

VQT290 VHandi—Hand Portable FXO call with VQT
Hand portable unit for manually and automatically generating FXO calls with support for VQT and path confirmation. Works with VQuad™ and VQT WebViewer™. Includes one FXO port andone Ethernet port for transferring results and degraded voice files to Central System.

VQT035 Voice Recorder (FXO RJ11 Hardware Tap / 2-Wire Capture Software)
Used for capturing Audio from RJ11 connections for GL Insight Fax / Modem Analysis, requires Dual UTA or USB T1E1 unit; includes FXO RJ11 Hardware Tap.



Automated Testing of 2-Wire Analog interface (PSTN, ATA, Media Gateway) using Dual UTA, vHandi™



Automated Testing of VoIP (SIP) Interface, Digital VoIP Phones, VoIP Softphones using Dual UTA

VQuad™ NetTest

VQT600 VQuad™ NetTest Data Server Solution
Data Quality Measurements including TCP measurements, UDP capacity, VoIP, Route, HTTP, FTP, and DNS; Only one VQT600 required to support entire solution including up to 2500 in stances of VQuad™ and or Apple / Android mobile devices

VQT601 Mobile Device Controller (MDC)
Apple / Android Mobile Device Apps
Remote Control of Apple and Android mobile devices from VQuad™ Script; Apple and Android apps are available at "**no charge**" (NetQCheck)

VQT610 Target Data Server (100 Mbps)
Used in conjunction with VQuad™ / Apple / Android NetTest; provides detailed measurement statistics; many can be deployed simultaneously

VQT611 Target Data Server (1 Gbps)
Used in conjunction with VQuad / Apple / Android NetTest; provides detailed measurement statistics; many can be deployed simultaneously

VQT650 Video Application Controller (VAC)
VAC includes VAC Server (Linux) and VAC companion software (Windows); Does not include 2 PCs

VQT661 VAC Windows/Linux Agent, single license
Windows/Linux Agent, single license, 5 Mbps

VQT662 VAC Windows/Linux Agent, single license
Windows/Linux Agent, single license, 10 Mbps

VQT663 VAC Windows/Linux Agent, single license
Windows/Linux Agent, single license, 50 Mbps

VQT671 VAC Android Agent, single license
Android Agent, single license, 5Mbps

Ethernet / IP/ VoIP Products

PKS100 PacketGen™ (includes PacketScan™)
A complete VoIP Simulation and Analysis software; includes PKV100 PacketScan™ Software, Base PacketGen™ w/ SIP Core, and RTP SoftCore (w/ 1 or 2 dongles).
http://www.gl.com/packetgen.html

PKG100 PacketGen™
Includes VoIP Simulation software only. Base PacketGen™ w/ SIP Core, and RTP SoftCore (w/ dongles).

PCD103 Optional Codec - AMR - Narrowband
AMR Codec - Narrowband

PCD107 Optional Codec - AMR - Wideband
AMR Codec - Wideband

PCD104 Optional Codec - EVRC
EVRC Codec

PCD105 Optional Codec - EVRC-B
EVRC–B Codec

PCD106 Optional Codec - EVRC-C
EVRC-C Codec

PKS101 SIP Core (additional)
2nd and Additional Instances (w/ dongle)

RTP Traffic Options

PKS102 RTP Soft Core (additional)
2nd and Additional Instances (w/ dongle)

PKS103 RTP IuUP Softcore
RTP Voice Traffic Generation over IuUP ; requires PKS102 and PCD103 – Used in UMTS Network at IuCS Interface

PKS200 RTP Pass Through Fax Emulation
RTP T.30 Pass-Through Fax Emulation, requires one of the licenses below, (w/dongle):

PKS202 2 Fax Port Licences
PKS203 8 Fax Port Licences
PKS204 30 Fax Port Licences
PKS205 60 Fax Port Licences
PKS206 20 Fax Port Licences

PKS211 T.38 Fax Simulation
T.38 Fax Simulation over UDPTL (up to 120 channels)

PKS107 RTP EUROCAE ED137
RTP Traffic Generation as per ED-137 – Interoperability Standards for VoIP ATM (Air Traffic Management) Components - PKS102 required

PKS108 RTP Voice Quality Measurements
RTP Based Voice Quality (MOS and R-Factor) measurement for the received stream – PKS102 required

PKS106 RTP Video Traffic Generation
RTP Video Traffic Generation – up to 500 simultaneous video streams using H.264 codecs. Requires PKS102 RTP Softcore

PCDxxx See descriptions of Codecs under PacketScan™
Two Codec licenses required – one for PacketGen™ + PacketScan™

RTP Toolbox

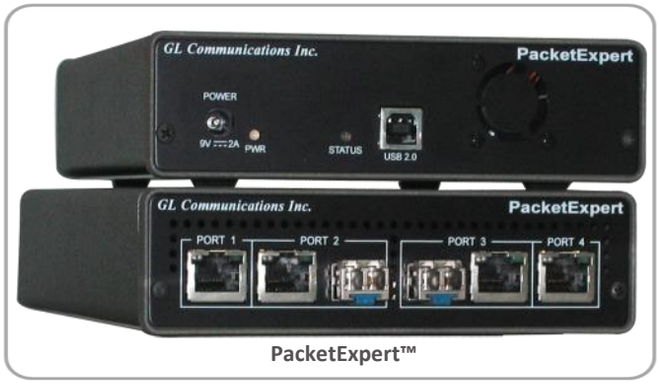
PKB100 RTP ToolBox™
Provides VoIP / RTP Simulation and Analysis with SIP signaling (w/dongle)
http://www.gl.com/rtptoolbox.html

PKB105 G.168 Echo Canceller Test Compliance Suite
Supports manual G.168 Echo Canceller Test Compliance Procedures and Codec Files (w/dongle to enable GLCView) ;includes PKB070.

PKB110 Client / Server for RTP Toolbox™
Remote Control of RTP Traffic over IP Networks, uses TCP/IP (w/dongle), requires PKB100; w/ C++ Client, w/ TCL Client

ETH100 PacketCheck™ (Software Based)
Allows 10 / 100 / 1000 Ethernet Interface Testing with BERT testing at MAC, IP, and UDP layers;
uses PC NIC (requires dongle), on GSA

ETH200 Dual PacketCheck™
Two PacketChecks.



PacketExpert™

http://www.gl.com/packetcheck.html

PXE100 PacketExpert™
Quad Port 10/ 100/ 1000 Wirespeed Packet Analyzer and Emulator, two with 10/100/1000 electrical, two electrical or optical 1 G, w/ RFC 2544, MPLS, Q-in-Q, and VLAN testing. Also MAC, IP, and UDP BERT Testing with Smart Loopback; SFPs extra and available (see below)
http://www.gl.com/packetexpert.html

PXG100 PacketExpert 10G™
Quad Port – Two with 10/100/1000 Electrical, Two Optical 1G / 10G, with BERT, RFC 2544, and Smart Loopback, SFPs extra and available (see below)

PXG101 PacketExpert 10G™ Tablet
Touchscreen Handheld PacketExpert 10G™, w/ Rechargeable Battery includes PXG100, SFPs extra and available (see below)

PXE104 PacketExpert™ - SA (4 Port)
Quad (4) Port PacketExpert™ w/ Embedded Single Board Computer (SBC). SBC Specs: Intel Atom CPU, 4GB RAM, Windows 7, MSATA SSD, 4 USB Ports If options, then x 1.

PXE112 PacketExpert™ - SA (12 Port)
12 Port PacketExpert™ w/ Embedded Single Board Computer (SBC). SBC Specs: Intel Atom CPU, 4GB RAM, Windows 7, MSATA SSD, 4 USB Ports. 19" 1U Rackmount Enclosure. (If options, then x 3)

Ethernet / IP/ VoIP Products

IPNetSim™ (IP Network Simulator)

PXE124 PacketExpert™ - SA (24 Port)
24 Port PacketExpert™ w/ Embedded Single Board Computer (SBC). SBC Specs: Intel Atom CPU, 4GB RAM, Windows 7, MSATA SSD, 4 USB Ports. 19" 2U Rackmount Enclosure. (If options, then x 6)

PXE105 Wirespeed Record / Playback – 1G
Wirespeed Ethernet frame capture and playback - up to 4 ports Simultaneously

PXG105 Wirespeed Record / Playback – 10G
10G - Wirespeed Ethernet frame capture & playback with timestamp & filter – up to 4 ports Simultaneously

PXE106 ExpertSAM – 1G
Single Port test to validate service-level agreements (SLAs) as per ITU-T Y.1564

PXG106 ExpertSAM – 10G
10G - Single Port test to validate service-level agreements (SLAs) as per ITU-T Y.1564

PXE107 PacketBroker - 1G
Non-intrusive Wirespeed Ethernet Tap w/ advanced filtering for deep packet analysis

PXG107 PacketBroker - 10G
10G and 1G Non-intrusive Wirespeed Ethernet Tap w/ advanced filtering for deep packet analysis

IPN110 IPLinkSim – 1 Gbps, Two active ports (1 Link)
Imparts packet delay, errors, loss, duplication, reordering, throttling, etc. on 100 Mbps copper to 1 GigE copper or optical links; with standard RJ45 (included for copper) or optional SFPs for optical; uses PXE100 platform

IPN501 IPNetSim – 1G MulitStream
Imparts packet delay, errors, loss, duplication, reordering, throttling on unique multi-streams (16 bidirectional unique streams) over 1G ports, rack-mount option available, uses PXG100 platform; optional SFPs

IPN505 IPNetSim – 10G Tablet
Touchscreen handheld, w/ Rechargeable Battery, includes IPNetSim 1G-MultiStream

IPN510 IPLinkSim – 1G/ 10G, Two active ports (1 Link)
Imparts packet delay, errors, loss, duplication, reordering, throttling on two electrical 10/100/1000, or two optical 1 GigE, or two 10 GigE optical; uses PXG100 platform; optional SFPs

IPN701 IPNetSim™ Handheld - Ethernet, IP, WAN Network Emulator
IPN702 Remote Options
Refer to Ethernet / IP Handheld Products for more details.

IPN900 Extended Hardware Warranty
Extended hardware warranty beyond 1 yr.

Accessories for Optical and Ethernet Products

IPN1310a SFP Transceiver for OC-3/STM-1 and OC-12/STM-4 Optical, LC, Single-Mode, 1310nm
Generic SFP for Optical, Duplex LC Connector SM, 1310nm, IR (Intermediate Range, 15 km).

IPN850a SFP Transceiver for OC-3/STM-1 and OC-12/STM-4 Optical, LC, Multi-Mode, 850nm
Generic SFP for Optical, Duplex LC Connector MM, 850nm, SR (Short Range, 550m).

SA019a Fiber Optic Cable, Single-Mode, Duplex LC to LC, 2m
2m FO Jumper, 9/125 SM, Duplex LC-LC, Ø2mm

SA019b Fiber Optic Cable, Single-Mode, Duplex LC to SC, 2m
2m FO Jumper, 9/125 SM, Ø2mm

SA019c Fiber Optic Cable , Multi-Mode, Duplex LC to LC, 2m
2m FO Jumper, 50/125 MM, OM3 (10G), Ø2mm

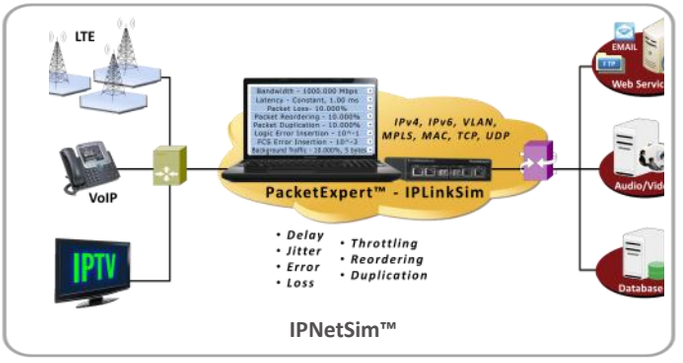
SA019d Fiber Optic Cable, Multi-Mode, Duplex LC to SC, 2m
2m FO Jumper, 50/125 MM, OM3 (10G), Ø2mm

SA019st Fiber Optic T-tap, Duplex LC, Single-Mode
Fiber Optic T-tap for Non-Intrusive Monitoring, Duplex LC Connectors, 9/125 SM, 70/30 split, includes one SA019a; requires one SA019sc

SA019sc Fiber Optic Analyzer Cable, Single-Mode, Duplex LC to Dual Duplex LC, 3m
3m FO Jumper, 9/125 SM, Duplex LC-Dual Duplex LC, Ø3mm, Special Analyzer Cable for use with SA019st

SA019mt Fiber Optic T-tap, Duplex LC, Multi-Mode
Fiber Optic T-tap for Non-Intrusive Monitoring, Duplex LC Connectors, 50/125 MM, 70/30 split, includes one SA019c ; requires one SA019sm

SA019mc Fiber Optic Analyzer Cable, Multi-Mode, Duplex LC to Dual Duplex LC, 3m
3m FO Jumper, 50/125 MM, Duplex LC-Dual Duplex LC, Ø3mm, Special Analyzer Cable for use with SA019mt



Ethernet / IP/ VoIP Products

Simulation Products (Contd...)

Back

MAPS™ (Message Automation & Protocol Simulation)
Protocol Simulation and Conformance Tool for IP

http://www.gl.com/signaling-and-traffic-simulator.html

PKS109 MAPS SIP HD
High Density SIP Call Generator w/ 4x1GigE Network Appliance, emulates 20,000 endpoints; For traffic options refer "**RTP Traffic Options**" section;

PKS120 MAPS™ SIP
SIP Protocol Emulation; For traffic options refer "RTP Traffic Options" section;

PKS121 SIP Conformance Test Suite
SIP Conformance Test Scripts, requires PKS120

PKS126 MAPS™ SIP-I
SIP – I Protocol Emulation, Similar to MAPS SIP but can carry ISUP content as MIME body; For traffic options refer "RTP Traffic Options" section;

PKS127 MAPS™ SIP-IMS
Additional SIP Features for IMS Support

PKS122 MAPS™ Megaco
Megaco Protocol Emulation, For traffic options refer "RTP Traffic Options" section;

PKS123 Megaco Conformance Test Suite
Megaco Conformance Test Scripts, requires PKS122

PKS124 MAPS – MGCP Protocol Emulation with Conformance Test Suite
Provides MGCP Protocol Emulation (Bulk Calling); optional PKS102 for traffic emulation, requires PKS125

PKS149 MAPS – Skinny Emulation
Emulation of Skinny Signaling for Cisco VoIP Phones and Routers - SCCP - Skinny Call Control Protocol; For traffic options refer "RTP Traffic Options" section;

PKS130 MAPS™ SIGTRAN SS7 Over IP
SIGTRAN Protocol Emulation – SS7(ISUP) over M3UA, M2UA and M2PA IP transport layers; optional xx610 and xx620 for TDM traffic generation (refer T1 E1 price list); TDM Fax emulation supported (Optional - Refer XXXFT0) (refer T1 E1 price list)

PKS132 MAPS™ MAP Over IP
Mobile Application Part (MAP) Protocol Emulation over M3UA,and M2PA IP transport layers; interfaces supported -- B, C, D, E, F, G, H, Gc, Gr, Gf and Gd

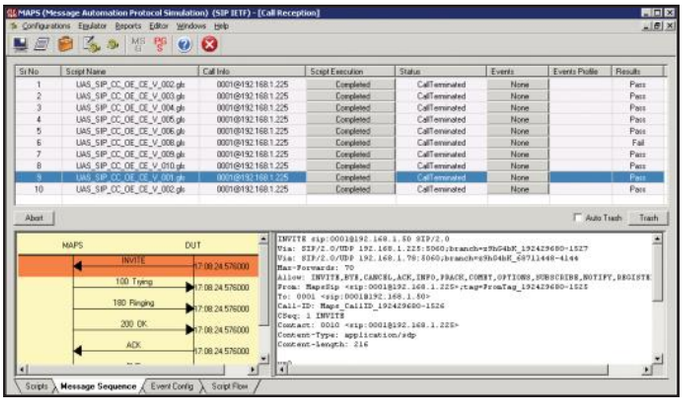
PKS151 MAPS™ CAP Emulation over IP
Customized Application for Mobile Network Enhanced Logic – CAMEL Application Part (CAP) over M3UA,and M2PA IP transport layers

PKS155 MAPS™ BICC Emulation
BICC Protocol Emulation, optional PKS102 for traffic emulation over M3UA and M2PA IP transport layer; For traffic options refer "RTP Traffic Options" section

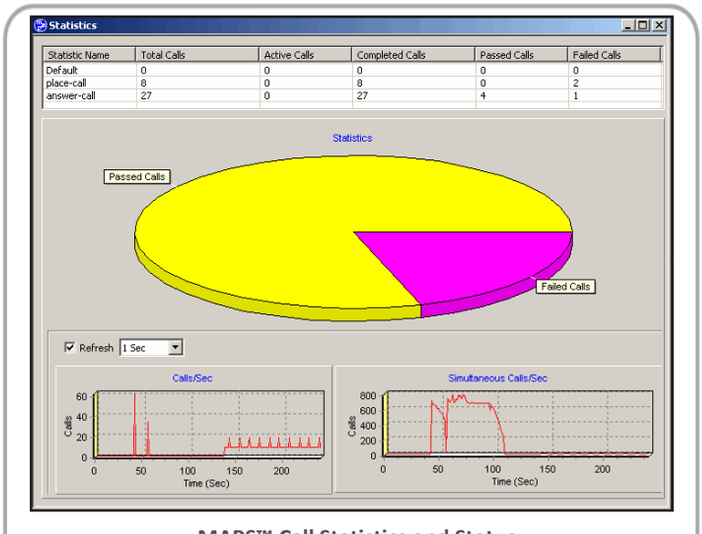
PKS135 MAPS™ SIGTRAN ISDN over IP
SIGTRAN Protocol Emulation – ISDN over IUA IP transport layer; optional xx610 and xx620 for TDM traffic generation (refer T1 E1 price list); TDM Fax emulation supported (Optional - Refer XXXFT0) (refer T1 E1 price list)

PKS137 MAPS™ GSM A Emulation over IP
BSC to MSC A interface emulation over M3UA IP transport layer; For traffic options refer "RTP Traffic Options" section

PKS139 MAPS™ Diameter Emulation
Emulates Diameter protocol (Supports S6a, Cx, Rx, Gx, Sh, S13 etc interfaces over TCP and SCTP transport layer)



MAPS™ Call Reception



MAPS™ Call Statistics and Status

Ethernet / IP/ VoIP Products

Simulation Products (Contd...)

Back

PKS140 MAPS™ LTE - S1 Interface Emulator
MAPS LTE – S1 Interface Emulation, between eNodeB and MME; For traffic options refer “GTP Traffic Options” section

.

PKS141 MAPS LTE – X2AP Emulation
X2AP Interface Emulation between eNodeBs

PKS142 MAPS™ LTE - eGTP Emulation (S5/S8 S11 Interfaces)
MAPS LTE – eGTP Emulation (S5 / S8 and S11 Interfaces), be tween SGW and PGW or between MME and SGW; For traffic options refer “GTP Traffic Options” section

PKS160 MAPS™ UMTS - IuCs and Iuh Interface Emulation
IuCs and Iuh Interface Emulation, between RNC and MSC or between HNB-GW and HNB; For CS (Circuit Switch) traffic options refer “RTP Traffic Options” section; For PS (Packet Switch) traffic options refer “GTP Traffic Options” section

PKS164 MAPS™ UMTS - Iups Interface Emulation
MAPS UMTS – IuPs Interface Emulation, between RNC and SGSN; For traffic options refer “GTP Traffic Options” section

PKS166 MAPS™ UMTS - GnGp Interface Emulation
MAPS UMTS – Gn Interface Emulation; For traffic options refer “GTP Traffic Options” section

PKS134 MAPS™ Abis Emulator over IP
BSC to BTS Abis Emulation over TCP transport layer; For traffic options refer “RTP Traffic Options” section

PKS136 MAPS™ SIGTRAN SS7 INAP
SIGTRAN Protocol Emulation – SS7 INAP (CS1 and CS2) over M3UA, and M2PA IP transport layers

PKS152 MAPS – SIGTRAN ANSI MAP
SIGTRAN Protocol Emulation - IS-41 over IP on B, C, E, F, H, Q, and N interfaces

PKS131 MAPS™ Gb Emulator over IP for BSC & SGSN
Gb interface emulation between BSC & SGSN; For traffic options refer “GTP Traffic Options” section

PKS143 MMS Server
MMS Server – 10 simultaneous messages / min

PKS144 Central Control Center for GSM
Central Control Center for GSM Networks

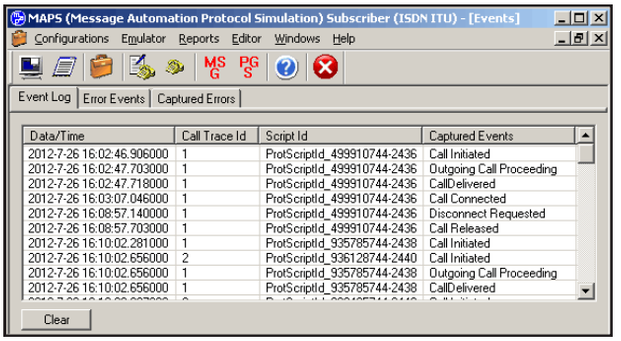
PKS145 MSC / BSC Media Gateway
Media Gateway (within BSC or MSC) for conversion between E1 and IP

GTP Traffic Options

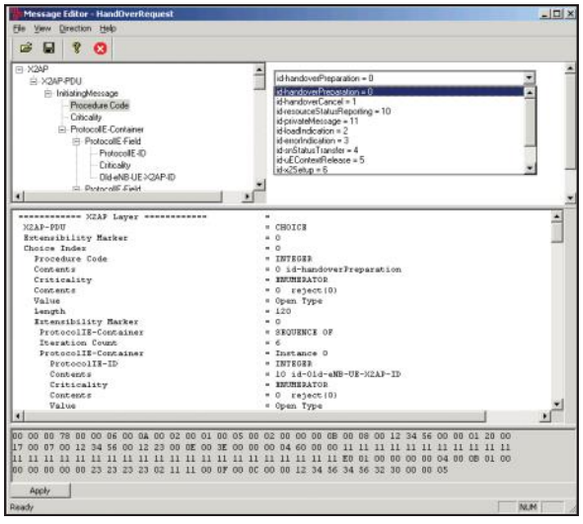
ETH101 Mobile Traffic Core - GTP
Generates and Verifies User Mobile Data Traffic over GTPv1 and GTPv2 (Used with UMTS and LTE) (for simulated HTTP traffic generation over GTP)

ETH102 Mobile Traffic Core - Gateway
Emulate SGSN / SGW (GTP to GTP) and GGSN / PDN-GW (GTP to IP) (acts as a real gateway)

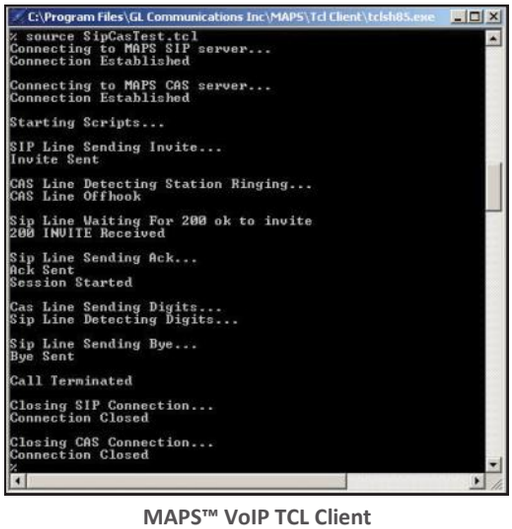
ETH103 MobileTrafficCore for Gb Interface
Generates and verifies hundreds to thousands of sessions of http, ftp, etc. user mobile data traffic over GPRS Gb interface (for simu lated HTTP traffic generation over IP)


MAPS (Message Automation Protocol Simulation) Subscriber (ISDN ITU) - [Events]
Configurations Emulator Reports Editor Windows Help
Event Log
Error Events
Captured Errors
Data/Time
Call Trace Id
Script Id
Captured Events
2012-7-26 16:02:46.906000 1 ProtScriptId_499910744-2436 Call Initiated
2012-7-26 16:02:47.703000 1 ProtScriptId_499910744-2436 Outgoing Call Proceeding
2012-7-26 16:02:47.718000 1 ProtScriptId_499910744-2436 CallDelivered
2012-7-26 16:03:07.046000 1 ProtScriptId_499910744-2436 Call Connected
2012-7-26 16:08:57.140000 1 ProtScriptId_499910744-2436 Disconnect Requested
2012-7-26 16:08:57.703000 1 ProtScriptId_499910744-2436 Call Released
2012-7-26 16:10:02.281000 1 ProtScriptId_935785744-2438 Call Initiated
2012-7-26 16:10:02.656000 2 ProtScriptId_936128744-2440 Call Initiated
2012-7-26 16:10:02.656000 1 ProtScriptId_935785744-2438 Outgoing Call Proceeding
2012-7-26 16:10:02.656000 1 ProtScriptId_935785744-2438 CallDelivered
Clear

MAPS™ VoIP Event Log



MAPS™ Message Editor



MAPS™ VoIP TCL Client

Ethernet / IP/ VoIP Products

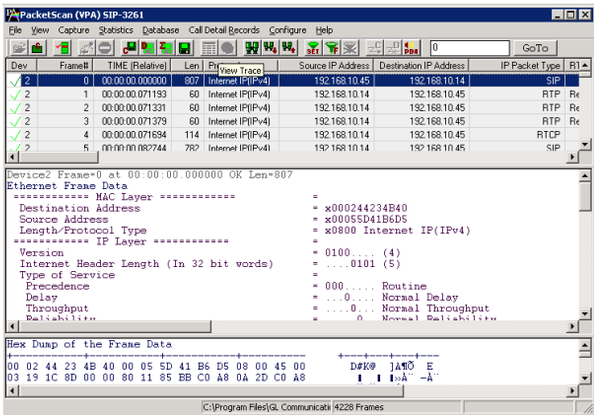
Packet Analyzers

Back

PKV100 PacketScan™ (Online and Offline)
This is an real-time VoIP analysis software (w/ dongle)
Includes decodes for transport (TCP,UDP, IP), Signaling (SIP, Megaco, MGCP, Diameter), and media (RTP, RTCP, Fax, Video).

Supported Codecs include G.711, G.726, G.729 A/B, GSM, iLBC, Speex, G.722.2, G.711 / G.726 Appendix 2

Additional Protocol Decode Support for – SIGTRAN, GSM over IP, UMTS over IP, and LTE available with purchase of licenses.
http://www.gl.com/packetscan-all-ip-packet-analyzer.html


PacketScan (VPA) SIP-3261
File View Capture Statistics Database Call Detail Records Configure Help
GoTo
View Trace
Dev Frame# TIME (Relative) Len Source IP Address Destination IP Address IP Packet Type
Device2 Frame=0 at 00:00:00.000000 OK Len=807
Ethernet Frame Data
Hex Dump of the Frame Data
C:\Program Files\GL Communicati 4228 Frames
PacketScan™

PKV120 PacketScan HD™ w/4 x 1GigE
High Density IP Traffic Analyzer w/ 4x1GigE Network Monitoring Appliance ; includes PKV100 Online (not Offline) for temporary audio codec support; available in portable platform

PKV122 PacketScan HD™ w/2 x 10GigE
High Density IP Traffic Analyzer w/ 2x10GigE Network Monitoring Appliance; includes PKV100 Online (not Offline) for temporary audio codec support; available in portable platform - call

PKV121 PacketScan FB™
File Based IP Traffic Analyzer Server for near real-time processing of traces

PKV301 LAN Switch w/ Mirror Port
NetGear GS105E - 5 Port 10/100/1000LAN switch with mirror port

PCD103 Optional Codec - AMR

PCD104 Optional Codec - EVRC

PCD105 Optional Codec - EVRC-B

PCD106 Optional Codec - EVRC-C

PKV103 IP Based GSM and UMTS Analyzer
(Optional with PacketScan™)
Decodes GSM & UMTS protocols over IP transport (w/dongle to enable GSM & UMTS analysis, require PKV100)

PKV105 SIGTRAN Analyzer (Optional with PacketScan™)
Provides IP decode of SS7 and ISDN signaling (w/dongle to enable SIGTRAN, requires PKV100).

PKV106 Offline SIGTRAN Analyzer (Optional w/ PacketScan™ Offline)
Decodes/Analyzes pre-captured SIGTRAN files (w/dongle to enable Offline Analyzer, requires PKV101).

PKV107 LTE Analyzer (Optional w/ PacketScan™)
(Analysis/Decode of broadband wireless 4G protocols (w/ dongle to enable LTE, requires PKV100)

PKV108 Offline LTE Analyzer (Optional w/ PacketScan™ Offline)
Decodes/Analyzes pre-captured LTE files (w/dongle to enable Offline Analyzer, requires PKV101)

Network Monitoring Software Options

PKV170 Network Surveillance Base Software (Perpetual License, Un limited Users/Nodes) – Includes Standard Server-Grade Computing Platform
Centralized Database Engine and Client – works with Protocol Analyzers, includes Oracle 11g Standard Edition One and Stand ard Server-Grade Computing Platform ; requires the following respective modules based on the protocol selection

PKV175 T1 E1 Physical Line Monitoring Option for Network Surveillance
Provides T1 E1 Physical Layer Status with Network Surveillance Solution - requires PKV170

PKV172 ISDN Call Detail Record (CDR) Option for Network Surveillance
Provides ISDN CDR option for Network Surveillance Base Soft ware – At central site - requires OLV100; At probe level requires respective protocol analyzer software and hardware.

OLV100 Offline / Remote ISDN Analyzer
Decode / Analyze ISDN option for Network Surveillance Base Software

PKV173 SS7/SIGTRAN Call Detail Record (CDR) Option for Network Surveillance
Provides SS7 (ISUP and MAP) /SIGTRAN CDR option for Network Surveillance Base Software - At central site - requires OLV120 for SS7 or requires PKV106 for SIGTRAN; At probe level requires respective protocol analyzer software and hardware.

OLV120 Offline / Remote SS7 Analyzer
Decode / Analyze SS7 option for Network Surveillance Base Software

PKV106 Offline / Remote SIGTRAN Analyzer
Decode / Analyze SIGTRAN option for Network Surveillance Base Software

PKV092 CAS Call Detail Records (CDR) Option for Network Surveillance
Provides CAS CDR option for Network Surveillance Base Software – requires PKV170 and OLV092

OLV092 Offline/Remote CAS Analyzer
Decode/Analyze CAS Option for Network Surveillance Base Soft ware – requires PKV170 and PKV092

Ethernet / IP/ VoIP Products

PKV174 GSM (TDM or IP) & TRAU Call Detail Record (CDR) Option for Network Surveillance
Provides GSM (TDM and IP) & TRAU (TDM) CDR option for Net work Surveillance Base Software - At central site - requires OLV150 for GSM and requires OLV153 for TRAU, OR requires PKV109 for GSM IP; At probe level requires respective protocol analyzer software and hardware.

OLV150 Offline / Remote GSM Analyzer
Decode / Analyze GSM option for Network Surveillance Base Software

OLV153 Offline / Remote TRAU Analyzer
Decode / Analyze TRAU option for Network Surveillance Base Software

PKV176 Provides VoIP Protocol (SIP, MGCP, Megaco etc.) CDR option for Network Surveillance Base Software
Requires SIP, Megaco, MGCP, H323, RTP Specific Software at Probe Level; requires PKV170 and PKV101

PKV101 Offline / Remote PacketScan Analyzer
Requires SIP, Megaco, MGCP, H323, RTP Protocol Decodes at Central Site (w/ dongle) - requires PKV170 and PKV176

PKV177 Provides UMTS Protocol (IuCS and IuPS) CDR option for Net work Surveillance Base Software
Requires UMTS IuCS, UMTS IuPS Specific Software at Probe Level; requires PKV170 and PKV109

PKV109 Offline IP Based GSM and UMTS Analyzer (Optional with PacketScan™)
Decode / Analyze UMTS option for Network Surveillance Base Software

PKV178 Provides LTE Protocol CDR option for Network Surveillance Base Software
Requires LTE Specific Software at Probe Level; requires PKV170 and PKV108

PKV108 Offline LTE (Long Term Evolution) Analyzer (Optional with PacketScan™)
Decode / Analyze LTE option for Network Surveillance Base Software

PKV171 Network Surveillance Agent Toolkit
Documentation, sample code (C++), and technical support for real-time connection to probes

PKV201 PacketShark™
GbE Packet Capture, Filter & Aggregation Tap
Refer to Ethernet / IP Handheld Products for more details.

PKV202 Remote Option

VBA032 Voice Band Analyzer
Analyze voice band parameters e.g. speech level, echo, noise, etc. – requires PC and dongle

PKA001 600 ohm to Sound Card Transformer/Adapter
Adapts Sound Card Interface to 600 Ohms.

PKA006 VoIP Hub for testing and configuration purposes
Useful for connecting multiple PacketGens™ and PacketScans™

SA051 2U 19" Rackmount Kit for PXE104
One Hardware Kit for Rackmounting One PXE104. 19" Rackmount Kit occupying 2U

PKS150a TDM / VoIP Gateway w/ Single T1 E1

PKS150b TDM / VoIP Gateway w/ Dual T1 E1

PKS150c TDM / VoIP Gateway w/ Quad T1 E1
Gateways with TDM and VoIP Interfaces – supports T1 E1 PRI ISDN, Megaco, SIP, H.323, T.38 Fax, and Modem.

PKX002 Packet Series Configuration, Setup, Testing (per day)
Exclusive of travel

PKX003 Software, Hardware Warranty and Support
Warranty and Comprehensive Support for Hardware and Soft ware = 10% of PO – All Packet Ethernet Products

PKX104 Interrupted One Year Software Upgrade Extensions
Warranty and Comprehensive Support for Hardware and Software = 12% of PO – All Packet Ethernet Products

PKX100 VoIP Training (per day, exclusive of travel)
VoIP Training (PacketGen™, PacketScan™, RTP Toolbox™, PacketCheck™, IPNetSim™, MAPS™).

PKX101 Professional Services (per day, exclusive of travel)
Development or Testing Services (per day)

PC Platforms

SA005c PCI Expansion Chassis
2-Slot PCI Expansion Chassis (For OC-3 / STM-1 Card Portability)

SA005d Notebook PC
Notebook PC (e.g. Sony Vaio)

SA005e Tower (Desktop) PC
PC w/o Monitor or Keyboard

SA005G MaxVision PC
Portable, Briefcase size PC (2 Exp. Slots)

SA005h Shuttle PC
Portable PC w/o Monitor or Keyboard

SA005i Ruggedized Lunchbox PC
Portable PC System – Recommended

SA005z 1U Height Rack PC
Rack mount PC w/o Monitor and w/o Keyboard

SA005r Rack PC – size 2U Height
Rack mount PC w/o Monitor, but with Keyboard/Mouse

SA005q NetBook PC

SA012 Lunchbox PC Shipping Case w/ Built-in Cart
Special PC Hard Shell Shipping Case

SA012c Shipping Case for Notebook PC (SA005d)
Shipping Case for FAA and ATT

SA022 Extended 1 Yr. Software Upgrades and Hardware Warranty, and Comprehensive Support for Basic and Optional Software
Warranty and Comprehensive Support for Hardware and Software = 10% of PO – All T1 E1 Products; includes PC

PC Platforms

SA012C Shipping Case for Notebook PC (Sa005d)
Shipping Case for FAA and ATT

DP001 Portable Pentium Lunchbox PC
>1 Ghz; > 1 GB RAM

DP004 Pentium Tower PC (without monitor)
>1 Ghz; > 1 GB RAM

DP005B 19" Pentium Rackmount PC
>1 Ghz; > 1 GB RAM

For complete list of accessories including special hardware options, visit http://www.gl.com/accessor.html

GL Routers

WAN Bridges & Routers

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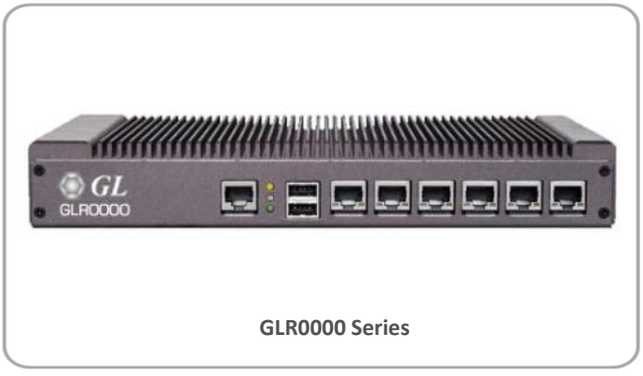

GLR0000 Series

GLR0000 **Inline IP Networking Appliance with PacketProbe™**
Linux Appliance w/ six (6) Gigabit Ethernet Ports and GL's Packet ProbeTM Monitoring Software

GLR0001 **Inline IP Networking Appliance**
Linux Appliance w/ six (6) Gigabit Ethernet Ports

GLR2000 Series

GLR2400 **2000 Series Router + 4 T1/E1 WAN Ports with PacketProbe™**
Linux Router w/ four (4) Gigabit Ethernet Ports, four (4) T1/E1 WAN Ports and GL's PacketProbeTM Monitoring Software

GLR2401 **2000 Series Router + 4 T1/E1 WAN Ports**
Linux Router w/ four (4) Gigabit Ethernet Ports, four (4) T1/E1 WAN Ports

GLR1000 Series

GLR1100 **1000 Series Router + 1 T1/E1 WAN Port with Packet Probe™**
Linux Router w/ two (2) 10/100 Ethernet Ports, one (1) T1/E1 WAN Port and GL's PacketProbeTM Monitoring Software

GLR1101 **1000 Series Router + 1 T1/E1 WAN Port**
Linux Router w/ two (2) 10/100 Ethernet Ports, one (1) T1/E1 WAN Port

GLR1200 **1000 Series Router + 2 T1/E1 WAN Ports with Packet Probe™**
Linux Router w/ two (2) 10/100 Ethernet Ports, two (2) T1/E1 WAN Ports and GL's PacketProbeTM Monitoring Software

GLR1201 **1000 Series Router + 2 T1/E1 WAN Ports**
Linux Router w/ two (2) 10/100 Ethernet Ports, two (2) T1/E1 WAN Ports

GLR3000 Series

GLR3500 **3000 Series Router + Dual DS3 Ports with PacketProbe™**
Linux Router w/ six (6) Gigabit Ethernet Ports, two (2) DS3 WAN Ports and GL's PacketProbeTM Monitoring Software

GLR3501 **3000 Series Router + Dual DS3 Ports**
Linux Router w/ six (6) Gigabit Ethernet Ports, two (2) DS3 WAN Ports

For more information on the products, please visit http://www.glrouters.com

Note: Specifications, Terms & Conditions are subject to change without notice.

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